

The Description of a New World, Called The Blazing-World.

A Merchant travelling into a foreign Country, fell extreamly in Love with a young Lady; but being a stranger in that Nation, and beneath her, both in Birth and Wealth, he could have but little hopes of obtaining his desire; however his Love growing more and more vehement upon him, even to the slighting of all difficulties, he resolved at last to Steal her away; which he had the better opportunity to do, because her Father's house was not far from the Sea, and she often using to gather shells upon the shore accompanied not with above two to three of her servants it encouraged him the more to execute his design. Thus coming one time with a little leight Vessel, not unlike a Packet-boat, mann'd with some few Sea-men, and well victualled, for fear of some accidents, which might perhaps retard their journey, to the place where she used to repair; he forced her away: But when he fancied himself the happiest man of the World, he proved to be the most unfortunate; for Heaven frowning at his Theft, raised such a Tempest, as they knew not what to do, or whither to steer their course; so that the Vessel, both by its own leightness, and the violent motion of the Wind, was carried as swift as an Arrow out of a Bow, towards the North-pole, and in a short time reached the Icy Sea, where the wind forced it amongst huge pieces of Ice; but being little, and leight, it did by the assistance and favour of the gods to this virtuous Lady, so turn and wind through those precipices, as if it had been guided by some experienced Pilot, and skilful Mariner: But alas! Those few men which were in it, not knowing whither they went, nor what was to be done in so strange an Adventure, and not being provided for so cold a Voyage, were all frozen to death; the young Lady onely, by the light of her Beauty, the heat of her Youth, and Protection of the Gods, remaining alive: Neither was it a wonder that the men did freeze to death; for they were not onely driven 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 a double strength at the conjunction of those two Poles, was insupportable: At last, the Boat still passing on, was forced into another World; for it is impossible to round this Worlds Globe from Pole to Pole, so as we do from East to West; because the Poles of the other World, joining to the Poles of this, do not allow any further passage to surround the World that way; but if any one arrives to either of these Poles, he is either forced to return, or to enter into another World: and lest you should scruple at it, and think, if it were thus, those that live at the Poles would either see two Suns at one time, or else they would never want the Sun's light for six months together, as it is commonly believed: You must know, that each of these Worlds having its own Sun to enlighten it, they move each one in their peculiar Circles; which motion is so just and exact, that neither can hinder or obstruct the other; for they do not exceed their Tropicks: and although they should meet, yet we in this World cannot so well perceive them, by reason of the brightness of our Sun, which being nearer to us, obstructs the splendor of the Sun of the other World, they being too far off to be discerned by our optick perception, except we use very good Telescopes; by which, skilful Astronomers have

often observed two or three Suns at once. But to return to the wandering Boat, and the distressed Lady; she seeing all the Men dead, found small comfort in life; their Bodies which were preserved all that while from putrefaction and stench, by the extremity of cold, began now to thaw, and corrupt; whereupon she having not strength enough to fling them over-board, was forced to remove out of her small Cabine, upon the deck, to avoid the nauseous smell; and finding the Boat swim between two plains of Ice, as a stream that runs betwixt two shores, at last perceived land, but covered all with Snow: from which came, walking upon the Ice, strange Creatures, in shape like Bears, only they went upright as men; those Creatures coming near the Boat, caught hold of it with their Paws, that served them instead of hands; some two or three of them entred first; and when they came out, the rest went in one after another; at last having viewed and observed all that was in the Boat, they spake to each other in a language which the Lady did not understand; and having carried her out of the Boat, sunk it, together with the dead men.

The Lady now finding her self in so strange a place, and amongst such wonderful kind of Creatures, was extreamly stricken with fear, and could entertain no other Thoughts, but that every moment her life was to be a sacrifice to their cruelty; but those Bear-like Creatures, how terrible soever they appear'd to her sight, yet were they so far from exercising any cruelty upon her, that rather they shewed her all civility and kindness imaginable; for she being not able to go upon the Ice, by reason of its slipperiness, they took her up in their rough arms, and carried her into their City, where instead of Houses, they had Caves under ground; and as soon as they enter'd the City, both Males and Females, young and old, flockt together to see this Lady, holding up their Paws in admiration; at last having brought her into a certain large and spacious Cave, which they intended for her reception, they left her to the custody of the Females, who entertained her with all kindness and respect, and gave her such victuals as they used to eat; but seeing her Constitution neither agreed with the temper of that Climate, nor their Diet, they were resolved to carry her into another Island of a warmer temper; in which were men like Foxes, onely walking in an upright shape, who received their neighbours the Bear-men with great civility and Courtship, very much admiring this beauteous Lady; and having discoursed some while together, agreed at last to make her a Present to the Emperor of their World; to which end, after she had made some short stay in the same place, they brought her cross that Island to a large River, whose stream run smooth and clear, like Chrystal; in which were numerous Boats, much like our Fox-traps; in one whereof she was carried, some of the Bear- and Fox-men waiting on her; and as soon as they had crossed the River, they came into an Island where there were Men which had heads, beaks and feathers, like wild-Geese, onely they went in an upright shape, like the Bear-men and Fox-men: their rumps they carried between their legs, their wings were of the same length with their Bodies, and their tails of an indifferent size, trailing after them like a Ladie's Garment; and after the Bear- and Fox-men had declared their intention and design to their Neighbours, the Geese- or Bird-men, some

of them joined to the rest, and attended the Lady through that Island, till they came to another great and large River, where there was a preparation made of many Boats, much like Birds nests, onely of a bigger size; and having crost that River, they arrived into another Island, which was of a pleasant and mild temper, full of Woods and the Inhabitants thereof were Satyrs, who received both the Bear- Fox- and Bird men, with all respect and civility; and after some conferences (for they all understood each others language) some chief of the Satyrs joining to them, accompanied the Lady out of that Island to another River, wherein were many handsome and commodious Barges; and having crost that River, they entered into a large and spacious Kingdom, the men whereof were of a Grass-Green Complexion, who entertained them very kindly, and provided all conveniences for their further voyage: hitherto they had onely crost Rivers, but now they could not avoid the open Seas any longer; wherefore they made their Ships and tacklings ready to sail over into the Island, where the Emperor of the Blazing- world (for so it was call'd) kept his residence. Very good Navigators they were; and though they had no knowledg of the Load-stone, or Needle or pendulous Watches, yet (which was as serviceable to them) they had subtil observations, and great practice; in so much that they could not onely tell the depth of the Sea in every place, but where there were shelves of Sand, Rocks, and other obstructions to be avoided by skilful and experienced Sea-men: Besides, they were excellent Augurers, which skill they counted more necessary and beneficial then the use of Compasses, Cards, Watches, and the like; but, above the rest, they had an extraordinary Art, much to be taken notice of by Experimental Philosophers, and that was a certain Engin, which would draw in a great quantity of Air, and shoot forth Wind with a great force; this Engine in a calm, they placed behind their Ships, and in a storm, before; for it served against the raging waves, like Cannons against an hostile Army, or besieged Town; it would batter and beat the waves in pieces, were they as high as Steeples; and as soon as a breach was made, they forced their passage through, in spight even of the most furious wind, using two of those Engins at every Ship, one before, to beat off the waves, and another behind to drive it on; so that the artificial wind had the better of the natural; for, it had a greater advantage of the waves, then the natural of the Ships: the natural being above the face of the Water, could not without a down right motion enter or press into the Ships; whereas the artificial with a sideward-motion, did pierce into the bowels of the Waves: Moreover, it is to be observed, that in a great Tempest they would join their Ships in battel-array: and when they feared Wind and Waves would be too strong for them, if they divided their Ships; they joined as many together as the compass or advantage of the places of the Liquid Element would give them leave. For, their Ships were so ingeniously contrived, that they could fasten them together as close as a Honey-comb, without waste of place; and being thus united, no Wind nor Waves were able to separate them. The Emperor's Ships, were all of Gold; but the Merchants and Skippers, of Leather; the Golden Ships were not much heavier then ours of Wood, by reason they were neatly made, and required not such thickness, neither were they troubled with Pitch, Tar,

Pumps, Guns, and the like, which make our Woodden-Ships very heavy; for though they were not all of a piece, yet they were so well sodder'd, that there was no fear of Leaks, Chinks, or Clefts; and as for Guns, there was no use of them, because they had no other enemies but the Winds: But the Leather Ships were not altogether so sure, although much leighter; besides, they were pitched to keep out Water.

Having thus prepar'd, and order'd their Navy, they went on in despite of Calm or Storm: And though the Lady at first fancied her self in a very sad condition, and her mind was much tormented with doubts and fears, not knowing whether this strange Adventure would tend to her safety or destruction; yet she being withal of a generous spirit, and ready wit, considering what dangers she had past, and finding those sorts of men civil and diligent attendants to her, took courage, and endeavoured to learn their language; which after she had obtained so far, that partly by some words and signs she was able to apprehend their meaning, she was so far from being afraid of them, that she thought her self not onely safe, but very happy in their company: By which we may see, that Novelty discomposes the mind, but acquaintance settles it in peace and tranquillity. At last, having passed by several rich Islands and Kingdoms, they went towards Paradise, which was the seat of the Emperor; and coming in sight of it, rejoiced very much; the Lady at first could perceive nothing but high Rocks, which seemed to touch the Skies; and although they appear'd not of an equal heighth, yet they seemed to be all one piece, without partitions: but at last drawing nearer, she perceived a clift, which was a part of those Rocks, out of which she spied coming forth a great number of Boats, which afar off shewed like a company of Ants, marching one after another; the Boats appeared like the holes or partitions in a Honey-comb, and when joined together, stood as close; the men were of several Complexions, but none like any of our World; and when both the Boats and Ships met, they saluted and spake to each other very courteously; for there was but one language in all that World: nor no more but one Emperor, to whom they all submitted with the greatest duty and obedience, which made them live in a continued Peace and Happiness; not acquainted with Foreign Wars or Home-bred Insurrections. The Lady now being arrived at this place, was carried out of her Ship into one of those Boats, and convey'd through the same passage (for there was no other) into that part of the World where the Emperor did reside; which part was very pleasant, and of a mild temper: Within it self it was divided by a great number of vast and large Rivers, all ebbing and flowing, into several Islands of unequal distance from each other, which in most parts were as pleasant, healthful, rich, and fruitful, as Nature could make them; and, as I mentioned before, secure from all Foreign Invasions, by reason there was but one way to enter, and that like a Labyrinth, so winding and turning among the Rocks, that no other Vessels but small Boats, could pass, carrying not above three passengers at a time: On each side all along the narrow and winding River, there were several Cities, some of Marble, some of Alabaster, some of Agat, some of Amber, some of Coral, and some of other precious materials not known in our world; all which after the Lady had passed, she came to the Imperial City, named

Paradise, which appeared in form like several Islands; for, Rivers did run betwixt every street, which together with the Bridges, whereof there was a great number, were all paved. The City it self was built of Gold; and their Architectures were noble, stately, and magnificent, not like our Modern, but like those in the Romans time; for, our Modern Buildings are like those Houses which Children use to make of Cards, one story above another, fitter for Birds, then Men; but theirs were more Large, and Broad, then high; the highest of them did not exceed two stories, besides those rooms that were under-ground, as Cellars, and other Offices. The Emperor's Palace stood upon an indifferent ascent from the Imperial City; at the top of which ascent was a broad Arch, supported by several Pillars, which went round the Palace, and contained four of our English miles in compass: within the Arch stood the Emperor's Guard, which consisted of several sorts of Men; at every half mile, was a Gate to enter, and every Gate was of a different fashion; the first, which allowed a passage from the Imperial City into the Palace, had on either hand a Cloyster, the outward part whereof stood upon Arches sustained by Pillars, but the inner part was close: Being entred through the Gate, the Palace it self appear'd in its middle like the Isle of a Church, a mile and a half long, and half a mile broad; the roof of it was all Arched, and rested upon Pillars, so artificially placed that a stranger would lose himself therein without a Guide; at the extream sides, that is, between the outward and inward part of the Cloyster, were Lodgings for Attendants; and in the midst of the Palace, the Emperor's own Rooms; whose Lights were placed at the top of every one, because of the heat of the Sun: the Emperor's apartment for State was no more inclosed then the rest; onely an Imperial Throne was in every apartment, of which the several adornments could not be perceived until one entered, because the Pillars were so just opposite to one another, that all the adornments could not be seen at one. The first part of the Palace was, as the Imperial City, all of Gold; and when it came to the Emperors apartment, it was so rich with Diamonds, Pearls, Rubies, and the like precious Stones, that it surpasses my skill to enumerate them all. Amongst the rest, the Imperial Room of State appear'd most magnificent; it was paved with green Diamonds (for there are in that World Diamonds of all Colours) so artificially, as it seemed but of one piece; the Pillars were set with Diamonds so close, and in such a manner, that they appear'd most Glorious to the sight; between every Pillar was a Bow or Arch of a certain sort of Diamonds, the like whereof our World does not afford; which being placed in every one of the Arches in several rows, seemed just like so many Rainbows of several different colours. The roof of the Arches was of blew Diamonds, and in the midst thereof was a Carbuncle, which represented the Sun; and the Rising and Setting-Sun at the East and West-side of the Room were made of Rubies. Out of this Room there was a passage into the Emperor's Bed-Chamber, the Walls whereof were of Jet, and the Floor of black Marble; the Roof was of Mother of Pearl, where the Moon and Blazing-Stars were represented by white Diamonds, and his Bed was made of Diamonds and Carbuncles.

No sooner was the Lady brought before the Emperor, but he conceived her to be some Goddess, and offered to worship her; which she refused, telling him, (for by that time she had pretty well learned their Language) that although she came out of another world, yet was she but a mortal. At which the Emperor rejoicing, made her his Wife, and gave her an absolute power to rule and govern all that World as she pleased. But her subjects, who could hardly be perswaded to believe her mortal, tender'd her all the Veneration and Worship due to a Deity.

Her Accoustrement after she was made Empress, was as followeth: On her head she wore a Cap of Pearl, and a Half-moon of Diamonds just before it; on the top of her Crown came spreading over a broad Carbuncle, cut in the form of the Sun; her Coat was of Pearl, mixt with blew Diamonds, and fringed with red ones; her Buskins and Sandals were of green Diamonds; In her left hand she held a Buckler, to signifie the Defence of her Dominions; which Buckler was made of that sort of Diamond as has several different Colours; and being cut and made in the form of an Arch, shewed like a Rain-bow; In her right hand she carried a Spear made of white Diamond, cut like the tail of a Blazing Star, which signified that she was ready to assault those that proved her Enemies.

None was allowed to use or wear Gold but those of the Imperial Race, which were the onely Nobles of the State; nor durst any one wear Jewels but the Emperor, the Empress and their Eldest Son; notwithstanding that they had an infinite quantity both of Gold and precious Stones in that World; for they had larger extents of Gold, then our Arabian Sands; their precious Stones were Rocks, and their Diamonds of several Colours; they used no Coyn, but all their Traffick was by exchange of several Commodities.

Their Priests and Governors were Princes of the Imperial Blood, and made Eunuches for that purpose; and as for the ordinary sort of men in that part of the World where the Emperor resided, they were of several Complexions; not white, black, tawny, olive or ash-coloured; but some appear'd of an Azure, some of a deep Purple, some of a Grass-green, some of a Scarlet, some of an Orange-colour, &c. Which Colours and Complexions, whether they were made by the bare reflection of light, without the assistance of small particles; or by the help of well-ranged and order'd Atoms; or by a continual agitation of little Globules; or by some pressing and re-acting motion, I am not able to determine. The rest of the Inhabitants of that World, were men of several different sorts, shapes, figures, dispositions, and humors, as I have already made mention, heretofore; some were Bear-men, some Worm-men, some Fish- or Mear-men, otherwise called Syrens; some Bird-men, some Fly-men, some Ant-men, some Geese-men, some Spider-men, some Lice-men, some Fox-men, some Ape-men, some Jackdaw-men, some Magpie-men, some Parrot-men, some Satyrs, some Gyants, and many more, which I cannot all remember; and of these several sorts of men, each followed such a profession as was most proper for the nature of their Species, which the Empress encouraged them in, especially those that had applied themselves to the study of several

Arts and Sciences; for they were as ingenious and witty in the invention of profitable and useful Arts, as we are in our world, nay, more; and to that end she erected 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 Chymists, the Satyrs her Galenick Physicians, the Fox-men her Politicians, the Spider- and Lice-men her Mathematicians, the Jackdaw-Magpie- and Parrot-men her Orators and Logicians, the Gyants her Architects, &c. But before all things, she having got a Sovereign power from the Emperor over all the World, desired to be informed both of the manner of their Religion and Government; and to that end she called the Priests and States men, to give her an account of either. Of the States men she enquired, first, Why they had so few Laws? To which they answered, That many Laws made many Divisions, which most commonly did breed Factions, and at last brake out into open Wars. Next, she asked, Why they preferred the Monarchical form of Government before any other? They answered, That as it was natural for one Body to have but one Head, so it was also natural for a Politick body to have but one Governor; and that a Common-wealth, which had many Governors was like a Monster with many Heads. Besides, said they, a Monarchy is a divine form of Government, and agrees most with our Religion: For as there is but one God, whom we all unanimously worship and adore with one Faith; so we are resolved to have but one Emperor, to whom we all submit with one obedience.

Then the Empress seeing that the several sorts of her Subjects had each their Churches apart, asked the Priests, whether they were of several Religions? They answered her Majesty, That there was no more but one Religion in all that World, nor no diversity of opinions in that same Religion for though there were several sorts of men, yet had they all but one opinion concerning the Worship and Adoration of God. The Empress asked them, Whether they were Jews, Turks, or Christians? We do not know, said they, what Religions those are; but we do all unanimously acknowledg, worship and adore the Onely, Omnipotent, and Eternal God, with all reverence, submission, and duty. Again, the Empress enquired, Whether they had several Forms of Worship? They answered, No: For our Devotion and Worship consists onely in Prayers, which we frame according to our several Necessities, in Petitions, Humiliations, Thanksgiving, &c. Truly, replied the Empress, I thought you had been either Jews, or Turks, because I never perceived any Women in your Congregations: But what is the reason, you bar them from your religious Assemblies? It is not fit, said they, that Men and Women should be promiscuously together in time of Religious Worship; for their company hinders Devotion, and makes many, instead of praying to God, direct their Devotion to their Mistresses. But, asked the Empress, Have they no Congregation of their own, to perform the duties of Divine Worship, as well as Men? No, answered they: but they stay at home, and say their Prayers by themselves in their Closets. Then the Empress desir'd to know the reason why the Priests and Governors of their World were made Eunuchs? They answer'd, To keep them from Marriage: For Women and Children most

commonly make disturbance both in Church and State. But, said she, Women and Children have no Employment in Church or State. 'Tis true, answer'd they; but, although they are not admitted to publick Employments, yet are they so prevalent with their Husbands and Parents, that many times by their importunate perswasions, they cause as much, nay, more mischief secretly, then if they had the management of publick Affairs.

The Empress having received an information of what concerned both Church and State, passed some time in viewing the Imperial Palace, where she admired much the skil and ingenuity of the Architects, and enquired of them, first, Why they built their Houses no higher then two stories from the Ground? They answered her Majesty, That the lower their Buildings were, the less were they subject either to the heat of the Sun, or Wind, Tempest, Decay, &c. Then she desired to know the reason, why they made them so thick? They answered, That, the thicker the Walls were, the warmer they were in Winter, the cooler in Summer; for their thickness kept out both the Cold and Heat. Lastly, she asked, Why they Arched their Roofs, and made so many Pillars? They replied, That Arches and Pillars, did not onely grace a Building very much, and caused it to appear Magnificent, but made it also firm and lasting.

The Empress was very well satisfied with their answers; and after some time, when she thought that her new founded societies of the Vertuoso's had made a good progress in the several Employments she had put them upon, she caused a Convocation first of the Bird-men, and commanded them to give her a true relation of the two Cœlestial Bodies, viz. the Sun and Moon, which they did with all the obedience and faithfulness befitting their duty.

The Sun, as much as they could observe, they related to be a firm or solid Stone, of a vast bigness; of colour yellowish, and of an extraordinary splendor: But the Moon, they said, was of a whitish colour; and although she looked dim in the presence of the Sun, yet had she her own light, and was a shining body of her self, as might be perceived by her vigorous appearance in Moon-shiny-nights; the difference onely betwixt her own and the Sun's light was, that the Sun did strike his beams in a direct line; but the Moon never respected the Centre of their World in a right line, but her Centre was always excentrical. The Spots both in the Sun and Moon, as far as they were able to perceive, they affirmed to be nothing else but flaws and stains of their stony Bodies. Concerning the heat of the Sun, they were not of one opinion; some would have the Sun hot in it self, alledging an old Tradition, that it should at some time break asunder, and burn the Heavens, and consume this world into hot Embers, which, said they, could not be done, if the Sun were not fiery of it self. Others again said, This opinion could not stand with reason; for Fire being a destroyer of all things, the Sun-Stone after this manner would burn up all the near adjoining Bodies: Besides, said they, Fire cannot subsist without fuel; and the Sun-Stone having nothing to feed on, would in a short time consume it self; wherefore they thought it more probable that the Sun was not actually hot, but onely by the reflection of its light; so that its heat was an effect of its light, both being

immaterial. But this opinion again was laugh'd at by others, and rejected as ridiculous, who thought it impossible that one immaterial should produce another; and believed that both the light and heat of the Sun proceeded from a swift Circular motion of the *Æthereal Globules*, which by their striking upon the Optick nerve, caused light, and their motion produced heat: But neither would this opinion hold; for, said some, then it would follow, that the sight of Animals is the cause of light; and that, were there no eyes, there would be no light; which was against all sense and reason. Thus they argued concerning the heat and light of the Sun; but, which is remarkable, none did say, that the Sun was a Globous fluid body, and had a swift Circular motion; but all agreed, It was fixt and firm like a Center, and therefore they generally called it the Sun-Stone.

Then the Empress asked them the reason, Why the Sun and Moon did often appear in different postures or shapes, as sometimes magnified, sometimes diminished; sometimes elevated, otherwhiles depressed; now thrown to the right, and then to the left? To which some of the Bird-men answered, That it proceeded from the various degrees of heat and cold, which are found in the Air, from whence did follow a differing density and rarity; and likewise from the vapours that are interposed, whereof those that ascend are higher and less dense then the ambient air, but those which descend are heavier and more dense. But others did with more probability affirm, that it was nothing else but the various patterns of the Air; for like as Painters do not copy out one and the same original just alike at all times; so, said they, do several parts of the Air make different patterns of the luminous Bodies of the Sun and Moon: which patterns, as several copies, the sensitive motions do figure out in the substance of our eyes.

This answer the Empress liked much better then the former, and enquired further, What opinion they had of those Creatures that are called the motes of the Sun? To which they answered, That they were nothing else but streams of very small, rare and transparent particles, through which the Sun was represented as through a glass: for if they were not transparent, said they, they would eclipse the light of the Sun; and if not rare and of an airy substance, they would hinder Flies from flying in the Air, at least retard their flying motion: Nevertheless, although they were thinner then the thinnest vapour, yet were they not so thin as the body of air, or else they would not be perceptible by animal sight. Then the Empress asked, Whether they were living Creatures? They answered, Yes: Because they did encrease and decrease, and were nourished by the presence, and starved by the absence of the Sun.

Having thus finished their discourse of the Sun and Moon, the Empress desired to know what Stars there were besides? But they answer'd, that they could perceive in that World none other but Blazing Stars, and from thence it had the name that it was called the Blazing-World; and these Blazing-Stars, said they, were such solid, firm and shining bodies as the Sun and Moon, not of a Globular, but of several sorts of figures: some had tails; and some, other kinds of shapes.

After this, The Empress asked them, What kind of substance or creature the Air was? The Bird-men answered, That they could have no other perception of the Air, but by their own Respiration: For, said they, some bodies are onely subject to touch, others onely to sight, and others onely to smell; but some are subject to none of our exterior Senses: For Nature is so full of variety, that our weak Senses cannot perceive all the various sorts of her Creatures; neither is there any one object perceptible by all our Senses, no more then several objects are by one sense. I believe you, replied the Empress; but if you can give no account of the Air, said she, you will hardly be able to inform me how Wind is made; for they say, that Wind is nothing but motion of the Air. The Bird-men answer'd, That they observed Wind to be more dense then Air, and therefore subject to the sense of Touch; but what properly Wind was, and the manner how it was made, they could not exactly tell; some said, it was caused by the Clouds falling on each other; and others, that it was produced of a hot and dry exhalation: which ascending, was driven down again by the coldness of the Air that is in the middle Region, and by reason of its leightness, could not go directly to the bottom, but was carried by the Air up and down: Some would have it a flowing Water of the Air; and others again, a flowing Air moved by the blaz of the Stars.

But the Empress, seeing they could not agree concerning the cause of Wind, asked, Whether they could tell how Snow was made? To which they answered That according to their observation, Snow was made by a commixture of Water, and some certain extract of the Element of Fire that is under the Moon; a small portion of which extract, being mixed with Water, and beaten by Air or Wind, made a white Froth called Snow; which being after some while dissolved by the heat of the same spirit, turned to Water again. This observation amazed the Empress very much; for she had hitherto 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 perswaded to believe it until the Fish- or Mearmen had delivered their observation upon the making of Ice, which, they said, was not produced, as some hitherto conceived, by the motion of the Air, raking the Superficies of the Earth, but by some strong saline vapour arising out of the Seas, which condensed Water into Ice; and the more quantity there was of that vapour, the greater were the Mountains of Precipices of Ice; but the reason that it did not so much freeze in the Torrid Zone, or under the Ecliptick, as near or under the Poles, was, that this vapour in those places being drawn up by the Sun-beams into the middle Region of the Air, was onely condensed into Water, and fell down in showres of Rain; when as, under the Poles, the heat of the Sun being not so vehement, the same vapour had no force or power to rise so high, and therefore caused so much Ice, by ascending and acting onely upon the surface of water.

This Relation confirmed partly the observation of the Bird-men concerning the cause of Snow; but since they had made mention that that same extract, which by its commixture with Water made Snow, proceeded from the Element of Fire, that is under

the Moon: The Emperess asked them, of what nature that Elementary Fire was; whether it was like ordinary Fire here upon Earth, or such a Fire as is within the bowels of the Earth, and as the famous Mountains Vesuvius and Ætna do burn withal; or whether it was such a sort of fire, as is found in flints, &c. They answered, That the Elementary Fire, which is underneath the Sun, was not so solid as any of those mentioned fires; because it had no solid fuel to feed on; but yet it was much like the flame of ordinary fire, onely somewhat more thin and fluid; for Flame, said they, is nothing else but the airy part of a fired Body.

Lastly, the Emperess asked the Bird-men of the nature of Thunder and Lightning? and whether it was not caused by roves of Ice falling upon each other? To which they answered, That it was not made that way, but by an encounter of cold and heat; so that an exhalation being kindled in the Clouds, did dash forth Lightning, and that there were so many rentings of Clouds as there were Sounds and Cracking noises: But this opinion was contradicted by others, who affirmed that Thunder was a sudden and monstrous Blaz, stirred up in the Air, and did not always require a Cloud; but the Emperess not knowing what they meant by Blaz (for even they themselves were not able to explain the sense of this word) liked the former better; and, to avoid hereafter tedious disputes, and have the truth of the Phænomena's of Cœlestial Bodies more exactly known, commanded the Bear-men, which were her Experimental Philosophers, to observe them through such Instruments as are called Telescopes, which they did according to her Majesties Command; but these Telescopes caused more differences and divisions amongst them, then ever they had before; for some said, they perceived that the Sun stood still, and the Earth did move about it; others were of opinion, that they both did move; and others said again, that the Earth stood still, and Sun did move; some counted more Stars then others; some discovered new Stars never seen before; some fell into a great dispute with others concerning the bigness of the Stars; some said, The Moon was another World like their Terrestrial Globe, and the spots therein were Hills and Vallies; but others would have the spots to be the Terrestrial parts, and the smooth and glossie parts, the Sea: At last, the Emperess commanded them to go with their Telescopes to the very end of the Pole that was joined to the World she came from, and try whether they could perceive any Stars in it: which they did; and, being returned to her Majesty, reported that they had seen three Blazing-Stars appear there, one after another in a short time, whereof two were bright, and one dim; but they could not agree neither in this observation: for some said, It was but one Star which appeared at three several times, in several places; and others would have them to be three several Stars; for they thought it impossible, that those three several appearances should have been but one Star, because every Star did rise at a certain time, and appear'd in a certain place, and did disappear in the same place: Next, It is altogether improbable, said they, That one Star should fly from place to place, especially at such a vast distance, without a visible motion; in so short a time, and appear in such different places, whereof two were quite opposite, and the third side-ways: Lastly, If it had been but one Star, said they, it would

always have kept the same splendor, which it did not; for, as above mentioned, two were bright, and one was dim. After they had thus argued, the Empress began to grow angry at their Telescopes, that they could give no better Intelligence; for, said she, now I do plainly perceive, that your Glasses are false Informers, and instead of discovering the Truth, delude your Senses; Wherefore I Command you to break them, and let the Bird-men trust onely to their natural eyes, and examine Cœlestial Objects by the motions of their own Sense and Reason. The Bear-men replied, That it was not the fault of their Glasses, which caused such differences in their Opinions, but the sensitive motions in their Optick organs did not move alike, nor were their rational judgments always regular: To which the Empress answered, That if their Glasses were true Informers, they would rectifie their irregular Sense and Reason; But, said she, Nature has made your Sense and Reason more regular then Art has your Glasses; for they are meer deluders, and will never lead you to the knowledg of Truth; Wherefore I command you again to break them; for you may observe the progressive motions of Cœlestial Bodies with your natural eyes better then through Artificial Glasses. The Bear-men being exceedingly troubled at her Majesties displeasure concerning their Telescopes, kneel'd down, and in the humblest manner petitioned, that they might not be broken; for, said they, we take more delight in Artificial delusions, then in Natural truths. Besides, we shall want Employments for our Senses, and Subjects for Arguments; for, were there nothing but truth, and no falshood, there would be no occasion to dispute, and by this means we should want the aim and pleasure of our endeavors in confuting and contradicting each other; neither would one man be thought wiser then another, but all would either be alike knowing and wise, or all would be fools; wherefore we most humbly beseech your Imperial Majesty to spare our Glasses, which are our onely delight, and as dear to us as our lives. The Empress at last consented to their request, but upon condition, that their disputes and quarrels should remain 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; and to make her amends for the displeasure which their Telescopes had occasioned, told her Majesty, that they had several other artificial Optick-Glasses, which they were sure would give her Majesty a great deal more satisfaction. Amongst the rest, they brought forth several Microscopes, by the means of which they could enlarge the shapes of little bodies, and make a Lowse appear as big as an Elephant, and a Mite as big as a Whale. First of all they shewed the Empress a gray Drone-flye, wherein they observed that the greatest part of her face, nay, of her head, consisted of two large bunches all cover'd over with a multitude of small Pearls or Hemispheres in a Trigonal order: Which Pearls were of two degrees, smaller and bigger; the smaller degree was lowermost, and looked towards the ground; the other was upward, and looked sideward, forward and backward: They were all so smooth and polished, that they were able to represent the image of any object, the number of them was in all 14000. After the view of this strange and miraculous Creature, and their several observations upon it, the Empress asked them, What they

judged those little Hemispheres might be? They answered, That each of them was a perfect Eye, by reason they perceived that each was covered with a Transparent Cornea, containing a liquor within them, which resembled the watery or glassie humor of the Eye. To which the Emperess replied, That they might be glassie Pearls, and yet not Eyes; and that perhaps their Microscopes did not truly inform them. But they smilingly answered her Majesty, That she did not know the vertue of those Microscopes: for they never delude, but rectifie and inform the Senses; nay, the World, said they, would be but blind without them, as it has been in former ages before those Microscopes were invented.

After this, they took a Charcoal, and viewing it with one of their best Microscopes, discovered in it an infinite multitude of pores, some bigger, some less; so close and thick, that they left but very little space betwixt them to be filled with a solid body; and to give her Imperial Majesty a better assurance thereof, they counted in a line of them an inch long, no less then 2700 pores; from which Observation they drew this following Conclusion, to wit, That this multitude of pores was the cause of the blackness of the Coal; for, said they, a body that has so many pores, from each of which no light is reflected, must necessarily look black, since black is nothing else but a privation of light, or a want of reflection. But the Emperess replied, That if all Colours were made by reflection of light, and that Black was as much a colour as any other colour; then certainly they contradicted themselves in saying that black was made by want of reflection. However, not to interrupt your Microscopical Inspections, said she, let us see how Vegetables appear through your Glasses; whereupon they took a Nettle, and by the vertue of the Microscope, discovered that underneath the points of the Nettle there were certain little bags or bladders, containing a poysonous liquor, and when the points had made way into the interior parts of the skin, they like Syringe-pipes served to conveigh that same liquor into them. To which Observation the Emperess replied, That if there were such poyson in Nettles, then certainly in eating of them, they would hurt us inwardly, as much as they do outwardly? But they answered, That it belonged to Physicians more then to Experimental Philosophers, to give Reasons hereof; for they only made Microscopical inspections, and related the Figures of the Natural parts of Creatures according to the representation of their glasses.

Lastly, They shewed the Emperess a Flea, and a Lowse; which Creatures through the Microscope appear'd so terrible to her sight, that they had almost put her into a swoon; the description of all their parts would be very tedious to relate, and therefore I'll forbear it at this present. The Emperess, after the view of those strangely-shaped Creatures, pitied much those that are molested with them, especially poor Beggars, which although they have nothing to live on themselves, are yet necessitated to maintain and feed of their own flesh and blood, a company of such terrible Creatures called Lice; who, instead of thanks, do reward them with pains, and torment them for giving them nourishment and food. But after the Emperess had seen the shapes of these monstrous Creatures, she

desir'd to know, Whether their Microscopes could hinder their biting, or at least shew some means how to avoid them? To which they answered, That such Arts were mechanical and below the noble study of Microscopical observations. Then the Empress asked them, Whether they had not such sorts of Glasses that could enlarge and magnifie the shapes of great Bodies as well as they had done of little ones? Whereupon they took one of their best and largest Microscopes, and endeavoured to view a Whale thorow it; but alas! the shape of the Whale was so big, that its Circumference went beyond the magnifying quality of the Glass; whether the error proceeded from the Glass, or from a wrong position of the Whale against the reflection of light, I cannot certainly tell. The Empress seeing the insufficiency of those Magnifying-Glasses, that they were not able to enlarge all sorts of Objects, asked the Bear-men, whether they could not make Glasses of a contrary nature to those they had shewed her, to wit, such as instead of enlarging or magnifying the shape or figure of an Object, could contract it beneath its natural proportion: Which, in obedience to her Majesties Commands, they did; and viewing through one of the best of them, a huge and mighty Whale appear'd no bigger then a Sprat; nay, through some no bigger then a Vinegar-Eele; and through their ordinary ones, an Elephant seemed no bigger then a Flea; a Camel no bigger then a Lowse; and an Ostrich no bigger then a Mite. To relate all their Optick observations through the several sorts of their Glasses, would be a tedious work, and tire even the most patient Reader, wherefore I'll pass them by; onely this was very remarkable and worthy to be taken notice of, that notwithstanding their great skil, industry and ingenuity in Experimental Philosophy, they could yet by no means contrive such Glasses, by the help of which they could spy out a Vacuum, with all its dimensions, nor Immaterial substances, Non-beings, and Mixt-beings, or such as are between something and nothing; which they were very much troubled at, hoping that yet, in time, by long study and practice, they might perhaps attain to it.

The Bird- and Bear-men being dismissed, the Empress called both the Syrens- or Fish-men, and the Worm-men, to deliver their Observations which they had made, both within the Seas, and the Earth. First, she enquired of the Fish-men whence the saltness of the Sea did proceed? To which they answered, That there was a volatile salt in those parts of the Earth, which as a bosom contain the Waters of the Sea, which Salt being imbibed by the Sea, became fixt; and this imbibing motion was that they call'd the Ebbing and Flowing of the Sea; for, said they, the rising and swelling of the Water, is caused by those parts of the volatile Salt as are not so easily imbibed, which striving to ascend above the Water, bear it up with such a motion, as Man, or some other Animal Creature, in a violent exercise uses to take breath. This they affirmed to be the true cause both of the saltness, and the ebbing and flowing-motion of the Sea, and not the jogging of the Earth, or the secret influence of the Moon, as some others had made the World believe.

After this, the Empress enquired, Whether they had observed, that all Animal Creatures within the Seas and other waters, had blood? They answered, That some had blood, more or less, but some had none. In Crea-fishes and Lobsters, said they, we perceive but little blood; but in Crabs, Oysters, Cockles, &c. none at all. Then the Empress asked them, in what part of their Bodies that little blood did reside? They answered, in a small vein, which in Lobsters went through the middle of their tails, but in Crea-fishes was found in their backs: as for other sorts of Fishes, some, said they, had onely blood about their Gills, and others in some other places of their Bodies; but they had not as yet observed any whose veins did spread all over their Bodies. The Empress wondring that there could be living Animals without Blood, to be better satisfied, desired the Worm-men to inform her, whether they had observed Blood in all sorts of Worms? They answered, That, as much as they could perceive, some had Blood, and some not; a Moth, said they, had no Blood at all, and a Lowse had, but like a Lobster, a little Vein along her back: Also Nits, Snails, and Maggots, as well as those that are generated out of Cheese and Fruits, as those that are produced out of Flesh, had no blood: But, replied the Empress, If those mentioned creatures have no blood, how is it possible they can 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 propriety to the life of an Animal; and that that which was commonly called Animal spirits, was nothing else but corporeal motions proper to the nature and figure of an Animal. Then she asked both the Fish- and Worm-men, whether all those Creatures that have blood, had a circulation of blood in their veins and arteries? But they answered, That it was impossible to give her Majesty an exact account thereof, by reason the circulation of blood was an interior motion, which their senses, neither of themselves, nor by the help of any Optick Instrument could perceive; but as soon as they had dissected an Animal Creature, to find out the truth thereof, the interior corporeal motions proper to that particular figure or creature, were altered. Then said the Empress, If all Animal Creatures have not blood, it is certain, they all have neither Muscles, tendons, nerves, &c. But, said she, Have you ever observed Animal Creatures 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 Animal Creatures that live both in Water, and on the Earth, indifferently, and if any, certainly those may be said to be of such a mixt nature, that is, partly Flesh, and partly Fish: But how is it possible, replied the Empress, that they should live both in Water, and on the Earth, since those Animals that live by the respiration of Air, cannot live within Water; and those that live in Water, cannot live by the respiration of Air, as Experience doth sufficiently witness. They answered her Majesty, That as there were different sorts of Creatures, so they had also different ways of Respirations; for Respiration, said they, is nothing else but a composition and division of parts, and the motions of nature being infinitely various, it is impossible that all Creatures should have the like motions; wherefore it was not necessary, that all Animal Creatures should be bound to live either by the Air, or by Water onely, but

according as Nature had ordered it convenient to their Species. The Empress seem'd very well satisfied with their answer, and desired to be further informed, Whether all Animal Creatures did continue their Species by a successive propagation of particulars, and whether in every Species the off-springs did always resemble their Generator or Producer, both in their interior and exterior Figures? They answered, her Majesty, That some Species or sorts of Creatures, were kept up by a successive propagation of an offspring that was like the producer, but some were not. Of the first rank, said they, are all those Animals that are of different sexes, besides several others; but of the second rank are for the most part those we call Insects, whose production proceeds from such causes as have no conformity or likeness with their produced Effects; as 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, nor Maggots neither; besides, they have almost the same taste which Cheese has. This proves nothing, answered they; for Maggots have a visible, local, progressive motion, which Cheese hath not. The Empress replied, That when all the Cheese was turned into Maggots, it might be said to have local, progressive motion. They answered, That when the Cheese by its own figurative motions was changed into Maggots, it was no more Cheese. The Empress confessed that she observed Nature was infinitely various in her works, and that though the species of Creatures did continue, yet their particulars were subject to infinite changes. But since you have informed me, said she, of the various sorts and productions of Animal Creatures, I desire you to tell me what you have observed of their sensitive perceptions? Truly, answered they, Your Majesty puts a very hard question to us, and we shall hardly be able to give a satisfactory answer to it; for there are many different sorts of Creatures, which as they have all different perceptions, so they have also different organs, which our senses are not able to discover, onely in an Oystershell we have with admiration observed, that the common sensorium of the Oyster lies just as the closing of the shells, where the pressure and reaction may be perceived by the opening and shutting of the shells every tide.

After all this, the Empress desired the Worm men to give her a true Relation how frost was made upon the Earth? To which they answered, That it was made much after the manner and description of the Fish- and Bird-men, concerning the Congelation of Water into Ice and Snow, by a commixture of saline and acid particles; which relation added a great light to the Ape-men, who were the Chymists, concerning their Chymical principles, Salt, Sulphur, and Mercury. But, said the Empress, if it be so, it will require an infinite multitude of saline particles to produce such a great quantity of Ice, Frost and Snow: besides, said she, when Snow, Ice and Frost, turn again into their former principle, I would fain 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.

Then the Empress enquired of them the reason, Why Springs were not as salt as the Sea is? also, why some did ebb and flow? To which it was answered, That the ebbing and

flowing of some Springs, was caused by hollow Caverns within the Earth, where the Seawater crowding thorow, did thrust forward, and drew backward the Spring-water, according to its own way of ebbing and flowing; but others said, That it proceeded from a small proportion of saline and acid particles, which the Spring-water imbibed from the Earth; and although it was not so much as to be perceived by the sense of Taste; yet it was enough to cause an ebbing and flowing-motion. And as for the Spring- water being fresh, they gave, according to their Observation, this following reason: There is, said they, a certain heat within the Bowels of the Earth, proceeding from its swift circular motion, upon its own axe, which heat distills the rarest parts of the Earth into a fresh and insipid water, which water being through the pores of the Earth, conveyed into a place where it may break forth without resistance or obstruction, causes Springs and Fountains; and these distilled Waters within the Earth, do nourish and refresh the grosser and drier parts thereof. This Relation confirmed the Empress in the opinion concerning the motion of the Earth, and the fixedness of the Sun, as the Bird-men had informed her; and 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 which they could give her no positive answer; onely this they affirmed, That heat and cold were not the primary producing causes of either Vegetables or Minerals, or other sorts of Creatures, but onely effects; and to prove this our assertion, said they, we have observed, that by change of some sorts of Corporeal motions, that which 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: Neither do we observe, that the Torrid Zone does contain so much Gold and Silver as the Temperate; nor is there great store of Iron and Lead wheresoever there is Gold; for these Metals are most found in colder Climates towards either of the Poles. This Observation, the Empress commanded them to confer with her Chymists, the Ape-men; to let them know that Gold was not produced by a violent, but a temperate degree of heat. She asked further, Whether Gold could not be made by Art? They answered, That they could not certainly tell her Majesty, but if it was possible to be done, they thought Tin, Lead, Brass, Iron and Silver, to be 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 perceive, replied the Empress, that your judgments are very irregular, since you believe that Gold, which is so fixt a Metal, that nothing has been found as yet which could occasion a dissolution of its interior figure, may be made by Art, and not Tin, Lead, Iron, Copper or Silver, which yet are so far weaker, and meaner Metals then Gold is. But the Worm-men excused themselves, that they were ignorant in that Art, and that such questions belonged more properly to the Ape-men, which were Her Majesties Chymists.

Then the Empress asked them, Whether by their Sensitive perceptions they could observe the interior corporeal, figurative Motions both of Vegetables and Minerals? They answer'd, That their Senses could perceive them after they were produced, but not

before; Nevertheless, said they, although the interior, figurative motions of Natural Creatures are not subject to the exterior, animal, sensitive perceptions, yet by their Rational perception they may judg of them, and of their productions if they be regular: Whereupon the Empress commanded the Bear-men to lend them some of their best Microscopes. At which the Bear-men smilingly answered her Majesty, that their Glasses would do them but little service in the bowels of the Earth, because there was no light; for, said they, our Glasses do onely represent exterior objects, according to the various reflections and positions of light; and wheresoever light is wanting, the glasses wil do no good. To which the Worm-men replied, that although they could not say much of refractions, reflections, inflections, and the like; yet were they not blind, even in the bowels of the Earth: for they could see the several sorts of Minerals, as also minute Animals, that lived there; which minute Animal Creatures were not blind neither, but had some kind of sensitive perception that was as serviceable to them, as sight, taste, smell, touch, hearing, &c. was to other Animal Creatures: By which it is evident, That Nature has been as bountiful to those Creatures that live underground, or in the bowels of the Earth, as to those that live upon the surface of the Earth, or in the Air, or in Water. But howsoever, proceeded the Worm-men, although there is light in the bowels of the Earth, yet your Microscopes will do but little good there, by reason those Creatures that live under ground have not such an optick sense as those that live on the surface of the Earth: wherefore, unless you had such Glasses as are proper for their perception, your Microscopes will not be any ways advantagious to them. The Empress seem'd well pleased with this answer of the Worm-men; and asked them further, Whether Minerals and all other Creatures within the Earth were colourless? At which question they could not forbear laughing; and when the Empress asked the reason why they laught? We most humbly beg your Majesties pardon, replied they; for we could not chuse but laugh, when we heard of a colourless Body. Why, said the Empress, Colour is onely an accident, which is an immaterial thing, and has no being of it self, but in another body. Those, replied they, that informed your Majesty thus, surely their rational motions were very irregular; For how is it possible, that a Natural nothing can have a being in Nature? If it be no substance, it cannot have a being, and if no being, it is nothing; Wherefore the distinction between subsisting of it self, and subsisting in another body, is a meer nicety, and non-sense, for there is nothing in Nature that can subsist of, or by it self, (I mean singly) by reason all parts of Nature are composed in one body, and though they may be infinitely divided, commixed, and changed in their particular, yet in general, parts cannot be separated from parts as long as Nature lasts; nay, we might as probably affirm, that Infinite Nature would be as soon destroyed, as that one Atom could perish; and therefore your Majesty may firmly believe, that there is no Body without colour, nor no Colour without body; for colour, figure, place, magnitude, and body, are all but one thing, without any separation or abstraction from each other.

The Empress was so wonderfully taken with this Discourse of the Worm-men, that she not only pardoned the rudeness they committed in laughing at first at her question, but

yielded a full assent to their opinion, which she thought the most rational that ever she had heard yet; and then proceeding in her questions, enquired further, whether they had observed any seminal principles within the Earth free from all dimensions and qualities, which produced Vegetables, Minerals, and the like? To which they answered, That concerning the seeds of Minerals, their sensitive perceptions had never observed any; but Vegetables had certain seeds out of which they were produced. Then she asked, whether those seeds of Vegetables lost their Species, that is, were annihilated in the production of their off-spring? To which they answered, That by an Annihilation, nothing could be produced, and that the seeds of Vegetables were so far from being annihilated in their productions, that they did rather numerously increase and multiply; for the division of one seed, said they, does produce numbers of seeds out of it self. But repli'd the Empress, A particular part cannot increase of it self. 'Tis true, answer'd they: but they increase not barely of themselves, but by joining and commixing with other parts, which do assist them in their productions, and by way of imitation form or figure their own parts into such or such particulars. Then, I pray inform me, said the Empress, what disguise those seeds put on, and how they do conceal themselves in their Transmutations? They answered, That seeds did no ways disguise or conceal, but rather divulge themselves in the multiplication of their off-spring; onely they did hide and conceal themselves from their sensitive perceptions so, that their figurative and productive motions were not perceptible by Animal Creatures. Again, the Empress asked them, whether there were any Non-beings within the Earth? To which they answered, That they never heard of any such thing; and that, if her Majesty would know the truth thereof, she must ask those Creatures that are called Immaterial spirits, which had a great affinity with Non-beings, and perhaps could give her a satisfactory answer to this question. Then she desired to be informed, 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, said they, there is no beginning in Nature, no not of Particulars; by reason Nature is Eternal and Infinite, and her particulars are subject to infinite changes and transmutations by vertue of their own Corporeal, figurative self-motions; so that there's nothing new in Nature, not properly a beginning of any thing. The Empress seem'd well satisfied with all those answers, and enquired further, Whether there was no Art used by those Creatures that live within the Earth? Yes, answered they: for the several parts of the Earth do join and assist each other in composition or framing of such or such particulars; and many times, there are factions and divisions; which cause productions of mixt Species; as, for example, weeds, instead of sweet flowres and useful fruits; but Gardeners and Husbandmen use often to decide their quarrels, and cause them to agree; which though it shews a kindness to the differing parties, yet 'tis a great prejudice to the Worms, and other Animal-Creatures that live under ground; for it most commonly causes their dissolution and ruine, at best they are driven out of their habitations. What, said the Empress, are not Worms produced out of the Earth? Their production in general, answered they, is like the production of all other

Natural Creatures, proceeding from the corporeal figurative motions of Nature; but as for their particular productions, they 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, that they feed on their own Parents which gave them life. Their life, answered they, is their own, and not their Parents; for no part or creature of Nature can either give or take away life; but parts do onely assist and join with parts, either in dissolution or production of other Parts and Creatures.

After this, and several other Conferences, which the Empress held with the Worm-men, she dismissed them; and having taken much satisfaction in several of their Answers, encouraged them in their Studies and Observations. Then she made a Convocation of her Chymists, the Ape-men; and commanded them to give her an account of the several Transmutations which their Art was able to produce. They begun first with a long and tedious Discourse concerning the Primitive Ingredients of Natural bodies; and how, by their Art, they had found out the principles out of which they consist. But they did not all agree in their opinions; for some said, That the Principles of all Natural Bodies were the four Elements, Fire, Air, Water, Earth, out of which they were composed: Others rejected this Elementary commixture, and said, There were many Bodies out of which none of the four Elements could be extracted by any degree of Fire whatsoever; and that, on the other side, there were divers Bodies, whose resolution by Fire reduced them into more then four different Ingredients; and these affirmed, That the only principles of Natural Bodies were Salt, Sulphur, and Mercury: Others again declared, That none of the forementioned could be called the True Principles of Natural Bodies; but that by their industry and pains which they had taken in the Art of Chymistry, they had discovered, that all Natural Bodies were produced but from one Principle, which was Water; for all Vegetables, Minerals, and Animals, said they, are nothing else, but simple Water distinguished into various figures by the vertue of their Seeds. But after a great many debates and contentions about this Subject, the Empress being so much tired that she was not able to hear them any longer, imposed a general silence upon them, and then declared her self in this following Discourse.

I am too sensible of the pains you have taken in the Art of Chymistry, to discover the Principles of Natural Bodies, and wish they had been more profitably bestowed upon some other, then such experiments; for both by my own Contemplation, and the Observations which I have made by my rational & sensitive perception upon Nature, and her works, I find, that Nature is but one Infinite Self-moving Body, which by the vertue of its self-motion, is divided into Infinite parts, which parts being restless, undergo perpetual changes and transmutations by their infinite compositions and divisions. Now, if this be so, as surely, according to regular Sense and Reason, it appears no otherwise; it is in vain to look for primary Ingredients, or constitutive principles of Natural Bodies, since there is no more but one Universal Principle of Nature, to wit,

self-moving Matter, which is the onely cause of all natural effects. Next, I desire you to consider, that Fire is but a particular Creature, or effect of Nature, and occasions not onely different effects in several Bodies, but on some Bodies has no power at all; witness Gold, which never could be brought yet to change its interior figure by the art of Fire; and if this be so, Why should you be so simple as to believe that Fire can shew you the Principles of Nature? and that either the Four Elements, or Water onely, or Salt Sulphur and Mercury, all which are no more but particular effects and Creatures of Nature, should be the Primitive Ingredients or Principles of all Natural Bodies? Wherefore, I will not have you to take more pains, and waste your time in such fruitless attempts, but be wiser hereafter, and busie your selves with such Experiments as may be beneficial to the publick.

The Empress having thus declared her mind to the Ape-men, and given them better Instructions then perhaps they expected, not knowing that her Majesty had such great and able judgment in Natural Philosophy, had several conferences with them concerning Chymical Preperations, which for brevities sake, I'll forbear to rehearse: Amongst the rest, she asked, how it came that the Imperial Race appear'd so young, and yet was reported to have lived so long; some of them two, some three, and some four hundred years? and whether it was by Nature, or a special Divine blessing? To which they answered, That there was a certain Rock in the parts of that World, which contained the Golden Sands, which Rock was hallow within, and did produce a Gum that was a hundred years before it came to its full strength and perfection; this Gum, said they, if it be held in a warm hand, will dissolve into an Oyl, the effects whereof are following: It being given every day for some certain time, to an old decayed man, in the bigness of a little Pea, will first make him spit for a week, or more; after this, it will cause Vomits of Flegm; and after that it will bring forth by vomits, humors of several colours; first of a pale yellow, then of a deep yellow, then of a green, and lastly of a black colour; and each of these humours have a several taste, some are fresh, some salt, some sower, some bitter, and so forth; neither do all these Vomits make them sick, but they come out on a sudden, and unawares, without any pain or trouble to the patient: And after it hath done all these mentioned effects, and clear'd both the Stomack and several other parts of the body, then it works upon the Brain, and brings forth of the Nose such kinds of humors as it did out of the Mouth, and much after the same manner; then it will purge by stool, then by urine, then by sweat, and lastly by bleeding at the Nose, and the Emeroids; all which effects it will perform within the space of 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 into a thick Scab, and cause both Hair, Teeth, and Nails to come off; which scab being arrived to its full maturity, opens first along the back, and comes off all in a piece like armour, and all this is done within the space of four months. After this the Patient is wrapt into a Cere- cloth, prepared of certain Gums and Juices, wherein he continues until the time of nine Months be expired from the first beginning of the cure, which is the time of a Childs formation in the

Womb. In the mean while, his diet is nothing else but Eagles-eggs, and Hinds-milk; and after the Cere-cloth is taken away, he will appear of the age of Twenty, both in shape, and strength. The weaker sort of this Gum is sovereign in healing of wounds, and curing of slight distempers. But this is also to be observed, that none of the Imperial race does use any other drink but Lime-water, or water in which Lime-stone is immerged; their meat is nothing else but Fowl of several sorts, their recreations are many, but chiefly Hunting.

This Relation amazed the Empress very much; for though in the World she came from, she had heard great reports of the Philosophers-stone, yet had she not heard of any that had ever found it out, which made her believe that it was but a Chymera; she called also to mind, that there had been in the same World a Man who had a little Stone which cured all kinds of Diseases outward and inward, according it was applied; and that a famous Chymist had found out a certain Liquor called Alkahest, which by the vertue of its own fire, consumed all Diseases; but she had never heard of a Medicine that could renew old Age, and render it beautiful, vigorous and strong: Nor would she have so easily believed it, had it been a medicine prepared by Art; for she knew that Art, being Natures Changeling, was not able to produce such a powerful effect; but being that the Gum did grow naturally, she did not so much scruple at it; for she knew that Nature's Works are so various and wonderful, that no particular Creature is able to trace her ways.

The Conferences of the Chymists being finished, the Empress made an Assembly of her Galenical Physicians, her Herbalists and Anatomists; and first she enquired of her Herbalists the particular effects of several Herbs and Drugs, and whence they proceeded? To which they answered, that they could, for the most part, tell her Majesty the vertues and operations of them, but the particular causes of their effects were unknown; onely thus much they could say, that their operations and vertues were generally caused by their proper inherent, corporeal, figurative motions, which being infinitely various in Infinite Nature, did produce infinite several effects. And it is observed, said they, that Herbs and Drugs are as wise in their operations, as Men in their words and actions; nay, wiser; and their effects are more certain then Men in their opinions; for though they cannot discourse like Men, yet have they Sense and Reason, as well as Men; for the discursive faculty is but a particular effect of Sense and Reason in some particular Creatures, to wit, Men, and not a principle of Nature, and argues often more folly then wisdom. The Empress asked, Whether they could not by a composition and commixture of other Drugs make them work other effects then they did, used by themselves? They answered, That they could make them produce artificial effects, but not alter their inherent, proper and particular natures.

Then the Empress commanded her Anatomists to dissect such kinds of Creatures as are called Monsters. But they answered her Majesty, That it would be but an unprofitable and useless work, and hinder their better imployments; for when we dissect dead

Animals, said they, it is for no other end, but to observe what defects and distempers they had, that we may cure the like in living ones, so that all our care and industry concerns onely the preservation of Mankind; but we hope your Majesty will not preserve Monsters, which are most commonly destroyed, except it be for novelty: Neither will the dissection of Monsters prevent the errors of Nature's irregular actions; for by dissecting some, we cannot prevent the production of others; so that our pains and labour will be to no purpose, unless to satisfie the vain curiosities of inquisitive men. The Empress replied, That such dissections would be very beneficial to Experimental Philosophers. If Experimental Philosophers, answer'd they, do spend their time in such useless Inspections, they waste it in vain, and have nothing but their labour for their pains.

Lastly, her Majesty had some Conferences with the Galenick Physicians about several Diseases, and amongst the rest, desired to know the cause and nature of Apoplexies, and the spotted Plague. They answered, That a deadly Apoplexy was a dead palsie of the Brain, and the spotted Plague was a Gangrene of the Vital parts: and as the Gangrene of outward parts did strike inwardly; so the Gangrene of inward parts, did break forth outwardly: which is the cause, said they, that as soon as the spots appear, death follows; for then it is an infallible sign, that the body is throughout infected with a Gangrene, which is a spreading evil; but some Gangrenes do spread more suddenly than others, and of all sorts of Gangrenes, the Plaguy- Gangrene is the most infectious; for other Gangrenes infect but the next adjoining parts of one particular body, and having killed that same Creature, go no further, but cease; when as, the Gangrene of the Plague, infects not onely the adjoining parts of one particular Creature, but also those that are distant; that is, one particular body infects another, and so breeds a Universal Contagion. But the Empress being very desirous to know in what manner the Plague was propagated, and became so contagious, asked, Whether it went actually out of one body into another? To which they answered, That it was a great dispute amongst the Learned of their Profession, Whether it came by a division and composition of parts; that is, by expiration and inspiration; or whether it was caused by imitation: some Experimental Philosophers, said they, will make us believe, that by 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, and do, for the most part, believe, that it is caused by an imitation of Parts; so that the motions of some parts which are sound, do imitate the motions of those that are infected and that by this means, the Plague becomes contagions, and spreading.

The Empress having hitherto spent her time in the Examination of the Bird- Fish- Worm- and Ape- men, &c. and received several Intelligences from their several imployments; at last had a mind to divert her self after her serious Discourses, and therefore she sent for the Spider-men, which were her Mathematicians, the Lice-men

which were here Geometricians, and the Magpie- Parrot- and Jackdaw-men, which 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, of squares, circles, triangles, and the like; which the Empress, notwithstanding that she had a very ready wit, and quick apprehension, could not understand; but the more she endeavoured to learn, the more was she confounded: Whether they did ever square the Circle, I cannot exactly tell, nor whether they could make imaginary points and lines; but this I dare say, That their points and lines were so slender, small and thin, that they seem'd next to Imaginary. The Mathematicians were in great esteem with the Empress, as being not onely the chief Tutors and Instructors in many Arts, but some of them excellent Magicians and Informers of spirits, which was the reason their Characters were so abstruse and intricate, that the Emperess knew not what to make of them. There is so much to learn in your Art, said she, that I can neither spare time from other affairs to busie my self in 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.

Then came the Lice-men, and endeavoured to measure all things to a hairs-breadth, and weigh them to an Atom; but their weights would seldom agree, especially in the weighing of Air, which they found a task impossible to be done; at which the Empress began to be displeased, and told them, that there was neither Truth nor Justice in their Profession; and so dissolved their society.

After this, the Empress was resolved to hear the Magpie- Parrot- and Jackdaw-men, which were her professed Orators and Logicians; whereupon one of the Parrot-men rose with great formality, and endeavoured to make an Eloquent Speech before her Majesty; but before he had half ended, his arguments and divisions being so many, that they caused a great confusion in his brain, he could not go forward, but was forced to retire backward, with great disgrace both to himself, and the whole society; and although one of his brethren endeavoured to second him by another speech, yet was he as far to seek, as the former. At which the Empress appear'd not a little troubled, and told them, That they followed too much the Rules of Art, and confounded themselves with too nice formalities and distinctions; but since I know, said she, that you are a people who have naturally voluble tongues, and good memories; I desire you to consider more the subject you speak of, then your artificial periods, connexions and parts of speech, and leave the rest to your natural Eloquence; which they did, and so became very eminent Orators.

Lastly, her Imperial Majesty being desirous to know what progress her Logicians had made in the Art of disputing, Commanded them to argue upon several Themes or Subjects; which they did; and having made a very nice discourse of Logistical terms and propositions, entred into a dispute by way of Syllogistical Arguments, through all the Figures and Modes: One began with an Argument of the first Mode of the first Figure, thus: Every Politician is wise: Every Knave is a Politician, Therefore every Knave is wise.

Another contradicted him with a Syllogism of the second Mode of the same Figure, thus: No Politician is wise: Every Knave is a Politician, Therefore no Knave is wise.

The third made an Argument in the third Mode of the same Figure, after this manner: Every Politician is wise: some Knaves are Politicians, Therefore some Knaves are wise.

The Fourth concluded with a Syllogism in the fourth Mode of the same Figure, thus: No Politician is wise: some Knaves are Politicians, Therefore some Knaves are not wise.

After this they took another subject, and one propounded this Syllogism: Every Philosopher is wise: Every Beast is wise, Therefore every Beast is a Philosopher.

But another said that this Argument was false, therefore he contradicted him with a Syllogism of the second Figure of the fourth Mode, thus: Every Philosopher is wise: some Beasts are not wise, Therefore some Beasts are not Philosophers.

Thus they argued, and intended to go on, but the Empress interrupted them: I have enough, said she, of your chopt Logick, and will hear no more of your Syllogisms; for it disorders my Reason, and puts my Brain on the rack; your formal argumentations are able to spoil all natural wit; and I'll have you to consider, that Art does not make Reason, but Reason makes Art; and therefore as much as Reason is above Art, so much is a natural rational discourse to be preferred before an artificial: for Art is, for the most part irregular, and disorders Men's understandings more then it rectifies them, and leads them into a Labyrinth where they'll never get out, and makes them dull and unfit for useful employments; especially your Art of Logick, which consists onely in contradicting each other, in making sophismes, and obscuring Truth, instead of clearing it.

But they replied to her Majesty, That the knowledg of Nature, that is, Natural Philosophy, would be imperfect without the Art of Logick; and that there was an improbable Truth which could no otherwise be found out then by the Art of disputing. Truly, said the Empress, I do believe that it is with Natural Philosophy, as it is with all other effects of Nature; for no particular knowledg can be perfect, by reason knowledg is dividable, as well as composable; nay, to speak properly, Nature her self cannot boast of any perfection, but God himself; because there are so many irregular motions in Nature, and 'tis but a folly to think that Art should be able to regulate them, since Art it self is, for the most part, irregular. But as for Improbable Truth I know not what your meaning is; for Truth is more then Improbability: nay, there is so much difference between Truth and Improbability, that I cannot conceive it possible how they can be joined together. In short, said she, I do no ways approve of your Profession; and though I will not dissolve your society, yet I shall never take delight in hearing you any more; wherefore confine your disputations to your Schools, lest besides the Commonwealth of Learning, they disturb also Divinity and Policy, Religion and Laws, and by that means draw an utter ruine and destruction both upon Church and State.