

*Francis Bacon*

New Atlantis

“God bless thee, my son; I will give thee the greatest jewel I have. For I will impart unto thee, for the love of God and men, a relation of the true state of Salomon’s House. Son, to make you know the true state of Salomon’s House, I will keep this order. First, I will set forth unto you the end of our foundation. Secondly, the preparations and instruments we have for our works. Thirdly, the several employments and functions whereto our fellows are assigned. And fourthly, the ordinances and rites which we observe.

“The end of our foundation is the knowledge of causes, and secret motions of things; and the enlarging of the bounds of human empire, to the effecting of all things possible.

“The preparations and instruments are these. We have large and deep caves of several depths; the deepest are sunk 600 fathoms; and some of them are digged and made under great hills and mountains; so that if you reckon together the depth of the hill, and the depth of the caves, they are, some of them, above three miles deep. For we find that the depth of an hill, and the depth of a cave from the flat, is the same thing; both remote alike from the sun and heaven’s beams, and from the open air. These caves we call the lower region. And we use them for all coagulations, induratiours, refrigerations, and conservations of bodies. We use them likewise for the imitation of natural mines and the producing also of new artificial metals, by compositions and materials which we use and lay there for many years. We use them also sometimes (which may seem strange) for curing of some diseases, and for prolongation of life, in some hermits that choose to live there, well accommodated of all things necessary, and indeed live very long; by whom also we learn many things.

“We have burials in several earths, where we put divers cements, as the Chinese do their porcelain. But we have them in greater variety, and some of them more fine. We also have great variety of composts and soils, for the making of the earth fruitful.

“We have high towers, the highest about half a mile in height, and some of them likewise set upon high mountains, so that the vantage of the hill with the tower, is in the highest of them three miles at least. And these places we call the upper region, account the air between the high places and the low, as a middle region. We use these towers, according to their several heights and situations, for insulation, refrigeration, conservation, and for the view of divers meteors—as winds, rain, snow, hail; and some of the fiery meteors also. And upon them, in some places, are dwellings of hermits, whom we visit sometimes, and instruct what to observe.

“We have great lakes, both salt and fresh, whereof we have use for the fish and fowl. We use them also for burials of some natural bodies, for we find a difference in things buried in earth, or in air below the earth, and things buried in water. We have also pools, of which some do strain fresh water out of salt, and others by art do turn fresh water into salt. We have also some rocks in the midst of the sea, and some bays upon the shore for some works, wherein is required the air and vapour of the sea. We have likewise violent streams and cataracts, which serve us for many motions; and likewise engines for multiplying and enforcing of winds to set also on divers motions.

“We have also a number of artificial wells and fountains, made in imitation of the natural sources and baths, as tinted upon vitriol, sulphur, steel, brass, lead, nitre, and other minerals; and again, we have little wells for infusions of many things, where the waters take the virtue quicker and better than in vessels or basins. And amongst them we have a water, which we call water of

Paradise, being, by that we do to it, made very sovereign for health and prolongation of life.

“We have also great and spacious houses, where we imitate and demonstrate meteors—as snow, hail, rain, some artificial rains of bodies, and not of water, thunders, lightnings; also generations of bodies in air—as frogs, flies, and divers others.

“We have also certain chambers, which we call chambers of health, where we qualify the air as we think good and proper for the cure of divers diseases, and preservation of health.

“We have also fair and large baths, of several mixtures, for the cure of diseases, and the restoring of man’s body from arefaction; and others for the confirming of it in strength of sinews, vital parts, and the very juice and substance of the body.

“We have also large and various orchards and gardens, wherein we do not so much respect beauty as variety of ground and soil, proper for divers trees and herbs, and some very spacious, where trees and berries are set, whereof we make divers kinds of drinks, besides the vineyards. In these we practise likewise all conclusions of grafting, and inoculating, as well of wild-trees as fruit-trees, which produceth many effects. And we make by art, in the same orchards and gardens, trees and flowers, to come earlier or later than their seasons, and to come up and bear more speedily than by their natural course they do. We make them also by art greater much than their nature; and their fruit greater and sweeter, and of differing taste, smell, colour, and figure, from their nature. And many of them we so order, as that they become of medicinal use.

“We have also means to make divers plants rise by mixtures of earths without seeds, and likewise to make divers new plants, differing from the vulgar, and to make one tree or plant turn into another.

“We have also parks, and enclosures of all sorts, of beasts and birds; which we use not only for view or rareness, but likewise for dissections and trials, that thereby may take light what may be wrought upon the body of man. Wherein we find many strange effects: as continuing life in them though divers parts, which you account vital, be perished and taken forth; resuscitating of some that seem dead in appearance, and the like. We try also all poisons, and other medicines upon them, as well of chirurgery [surgery] as physic. By art likewise we make them greater or smaller than their kind is, and contrariwise dwarf them and stay their growth; we make them more fruitful and bearing than their kind is, and contrariwise barren and not generative. Also we make them differ in colour, shape, activity, many ways. We find means to make commixtures and copulations of divers kinds, which have produced many new kinds, and them not barren, as the general opinion is. We make a number of kinds of serpents, worms, flies, fishes of putrefaction, whereof some are advanced (in effect) to be

perfect creatures, like beasts or birds, and have sexes, and do propagate. Neither do we this by chance, but we know beforehand of what matter and commixture, what kind of those creatures will arise.

“We have also particular pools where we make trials upon fishes, as we have said before of beasts and birds.

“We have also places for breed and generation of those kinds of worms and flies which are of special use; such as are with you your silkworms and bees.

“I will not hold you long with recounting of our brewhouses, bake-houses, and kitchens, where are made divers drinks, breads, and meats, rare and of special effects. Wines we have of grapes, and drinks of other juice, of fruits, of grains, and of roots, and of mixtures with honey, sugar, manna, and fruits dried and decocted; also of the tears or wounding of trees, and of the pulp of canes. And these drinks are of several ages, some to the age or last of forty years. We have drinks also brewed with several herbs, and roots, and spices; yea, with several fleshes, and white-meats; whereof some of the drinks are such as they are in effect meat and drink both, so that divers, especially in age, do desire to live with them with little or no meat or bread. And above all we strive to have drinks of extreme thin parts, to insinuate into the body, and yet without all biting, sharpness, or fretting; insomuch as some of them put upon the back of your hand, will with a little stay pass through to the palm, and yet taste mild to the mouth. We have also waters, which we ripen in that fashion, as they become nourishing, so that they are indeed excellent drinks, and many will use no other. Bread we have of several grains, roots, and kernels; yea, and some of flesh, and fish, dried; with divers kinds of leavings and seasonings; so that some do extremely move appetites, some do nourish so, as divers do live of them, without any other meat, who live very long. So for meats, we have some of them so beaten, and made tender, and mortified, yet without all corrupting, as a weak heat of the stomach will turn them into good chylus, as well as a strong heat would meat otherwise prepared. We have some meats also and bread, and drinks, which taken by men, enable them to fast long after; and some other, that used make the very flesh of men’s bodies sensibly more hard and tough, and their strength far greater than otherwise it would be.

“We have dispensatories or shops of medicines; wherein you may easily think, if we have such variety of plants, and living creatures, more than you have in Europe (for we know what you have), the simples, drugs, and ingredients of medicines must likewise be in so much the greater variety. We have them likewise of divers ages, and long fermentations. And for their preparations, we have not only all manner of exquisite distillations, and separations, and especially by gentle heats, and percolations through divers strainers, yea, and substances; but also exact forms of composition, whereby they incorporate almost as they were natural simples.

“We have also divers mechanical arts, which you have not; and stuffs made by them, as papers, linen, silks, tissues, dainty works of feathers of wonderful lustre, excellent dyes, and many others, and shops likewise as well for such as are not brought into vulgar use amongst us, as for those that are. For you must know, that of the things before recited, many of them are grown into use throughout the kingdom, but yet, if they did flow from our invention, we have of them also for patterns and principals.

“We have also furnaces of great diversities, and that keep great diversity of heats; fierce and quick, strong and constant, soft and mild, blown, quiet, dry, moist, and the like. But above all we have heats, in imitation of the sun’s and heavenly bodies’ heats, that pass divers inequalities, and as it were orbs, progresses, and returns whereby we produce admirable effects. Besides, we have heats of dung, and of bellies and maws of living creatures and of their bloods and bodies, and of hays and herbs laid up moist, of lime unquenched, and such like. Instruments also which generate heat only by motion. And farther, places for strong insulations; and again, places under the earth, which by nature or art yield heat. These divers heats we use, as the nature of the operation which we intend requireth.

“We have also perspective-houses, where we make demonstrations of all lights and radiations, and of all colours; and out of things uncoloured and transparent, we can represent unto you all several colours, not in rainbows, as it is in gems and prisms, but of themselves single. We represent also all multiplications of light, which we carry to great distance, and make so sharp, as to discern small points and lines. Also all colourations of light: all delusions and deceits of the sight, in figures, magnitudes, motions, colours; all demonstrations of shadows. We find also divers means, yet unknown to you, of producing of light, originally from divers bodies. We procure means of seeing objects afar off, as in the heaven and remote places; and represent things near as afar off, and things afar off as near; making feigned distances. We have also helps for the sight far above spectacles and glasses in use; we have also glasses and means to see small and minute bodies, perfectly and distinctly; as the shapes and colours of small flies and worms, grains, and flaws in gems which cannot otherwise be seen, observations in urine and blood not otherwise to be seen. We make artificial rainbows, halos, and circles about light. We represent also all manner of reflections, refractions, and multiplications of visual beams of objects.

“We have also precious stones, of all kinds, many of them of great beauty and to you unknown; crystals likewise, and glasses of divers kind; and amongst them some of metals vitrified, and other materials, besides those of which you make glass. Also a number of fossils, and imperfect minerals, which you have not. Likewise loadstones of prodigious virtue: and other rare stones, both natural and artificial.

“We have also sound-houses, where we practise and demonstrate all sounds and their generation. We have harmony which you have not, of quarter-sounds and lesser slides of sounds. Divers instruments of music likewise to you unknown, some sweeter than any you have; with bells and rings that are dainty and sweet. We represent small sounds as great and deep, likewise great sounds, extenuate and sharp; we make divers tremblings and warblings of sounds, which in their original are entire. We represent and imitate all articulate sounds and letters, and the voices and notes of beasts and birds. We have certain helps, which set to the ear do further the hearing greatly; we have also divers strange and artificial echoes, reflecting the voice many times, and as it were tossing it; and some that give back the voice louder than it came, some shriller and some deeper; yea, some rendering the voice, differing in the letters or articulate sound from that they receive. We have all means to convey sounds in trunks and pipes, in strange lines and distances.

“We have also perfume-houses, wherewith we join also practices of taste. We multiply smells which may seem strange: we imitate smells, making all smells to breathe out of other mixtures than those that give them. We make divers imitations of taste likewise, so that they will deceive any man’s taste. And in this house we contain also a confiture-house, where we make all sweetmeats, dry and moist, and divers pleasant wines, milks, broths, and salads, far in greater variety than you have.

“We have also engine-houses, where are prepared engines and instruments for all sorts of motions. There we imitate and practise to make swifter motions than any you have, either out of your muskets or any engine that you have; and to make them and multiply them more easily and with small force, by wheels and other means, and to make them stronger and more violent than yours are, exceeding your greatest cannons and basilisks. We represent also ordnance and instruments of war and engines of all kinds; and likewise new mixture and compositions of gunpowder, wild-fires burning in water and unquenchable, also fire-works of all variety, both for pleasure and use. We imitate also flights of birds; we have some degrees of flying in the air. We have ships and boats for going under water and brooking of seas; also swimming girdles and supporters. We have divers curious clocks and other like motions of return, and some perpetual motions. We imitate also motions of living creatures by images of men, beasts, birds, fishes, and serpents; we have also a great number of other various motions, strange for equality, fineness and subtilty.

“We have also a mathematical-house, where are represented all instruments, as well of geometry as astronomy, exquisitely made.

“We have also houses of deceits of the senses, where we represent all manner of feats of juggling, false apparitions, impostures and illusions, and their

fallacies. And surely you will easily believe that we, that have so many things truly natural which induce admiration, could in a world of particulars deceive the senses if we would disguise those things, and labour to make them more miraculous. But we do hate all impostures and lies, insomuch as we have severely forbidden it to all our fellows, under pain of ignominy and fines, that they do not show any natural work or thing adorned or swelling, but only pure as it is, and without affectation of strangeness.

“These are, my son, the riches of Salomon’s House.

“For the several employments and offices of our fellows, we have twelve that sail into foreign countries under the names of other nations (for our own we conceal), who bring us the books and abstracts, and patterns of experiments of all other parts. These we call merchants of light.

“We have three that collect the experiments which are in all books. These we call depreparators.

“We have three that collect the experiments of all mechanical arts, and also of liberal sciences, and also of practices which are not brought into arts. These we call mystery-men.

“We have three that try new experiments such as themselves think good. These we call pioneers or miners.

“We have three that draw the experiments of the former four into titles and tables, to give the better light for the drawing of observations and axioms out of them. These we call compilers. We have three that bend themselves, looking into the experiments of their fellows, and cast about how to draw out of them things of use and practice for man’s life and knowledge, as well for works as for plain demonstration of causes, means of natural divinations, and the easy and clear discovery of the virtues and parts of bodies. These we call dowry-men or benefactors.

“Then after divers meetings and consults of our number, to consider of the former labours and collections, we have three that take care out of them to direct new experiments, of a higher light, more penetrating into Nature than the former. These we call lamps.

“We have three others that do execute the experiments so directed, and report them. These we call inoculators.

“Lastly, we have three that raise the former discoveries by experiments into greater observations, axioms, and aphorisms. These we call interpreters of Nature.

“We have also, as you must think, novices and apprentices, that the succession of the former employed men do not fail; besides a great number of servants and attendants, men and woman. And this we do also: we have consultations, which of the inventions and experiences which we have discovered shall be published, and which not: and take all an oath of secrecy for the concealing of

those which we think fit to keep secret: though some of those we do reveal sometime to the state, and some not.

“For our ordinances and rites, we have two very long and fair galleries: in one of these we place patterns and samples of all manner of the more rare and excellent inventions: in the other we place the statues of all principal inventors. There we have the statue of your Columbus, that discovered the West Indies: also the inventor of ships: your Monk that was the inventor of ordnance and of gunpowder: the inventor of music: the inventor of letters: the inventor of printing: the inventor of observations of astronomy: the inventor of works in metal: the inventor of glass: the inventor of silk of the worm: the inventor of wine: the inventor of corn and bread: the inventor of sugars; and all these by more certain tradition than you have. Then we have divers inventors of our own, of excellent works; which since you have not seen, it were too long to make descriptions of them; and besides, in the right understanding of those descriptions you might easily err. For upon every invention of value we erect a statue to the inventor, and give him a liberal and honourable reward. These statues are some of brass, some of marble and touchstone, some of cedar and other special woods gilt and adorned; some of iron, some of silver, some of gold.

“We have certain hymns and services, which we say daily, of laud and thanks to God for His marvellous works. And forms of prayers, imploring His aid and blessing for the illumination of our labours; and turning them into good and holy uses.

“Lastly, we have circuits or visits, of divers principal cities of the kingdom; where as it cometh to pass we do publish such new profitable inventions as we think good. And we do also declare natural divinations of diseases, plagues, swarms of hurtful creatures, scarcity, tempest, earthquake, great inundations, comets, temperature of the year, and divers other things; and we give counsel thereupon, what the people shall do for the prevention and remedy of them.”

And when he had said this, he stood up; and I, as I had been taught, knelt down; and he laid his right hand upon my head, and said, “God bless thee, my son, and God bless this relation which I have made. I give thee leave to publish it, for the good of other nations; for we here are in God’s bosom, a land unknown.” And so he left me; having assigned a value of about two thousand ducats for a bounty to me and my fellows. For they give great largesses, where they come, upon all occasions.

THE REST WAS NOT PERFECTED

*Francis Bacon* (1561–1626) was an English philosopher and statesman.

*Source:* THE WORKS OF FRANCIS BACON, BARON OF VERULAM, VISCOUNT ST. ALBANS, AND LORD HIGH CHANCELLOR OF ENGLAND. 10 vols (London: Printed for W. Baynes and Son, 1824), 2:III–22.