

The New Atlantis

From an unfinished work by Francis Bacon, published in 1627, a year after his death. (Edited and section headers by David Fenimore)

[Bacon describes a fictional voyage to previously unknown parts of the South Pacific, where he and his companions come ashore and discover a city centered around a kind of research institution or university called "Solomon's House," which the scholar in charge here describes:]

Mission Statement

"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.

Underground Laboratories

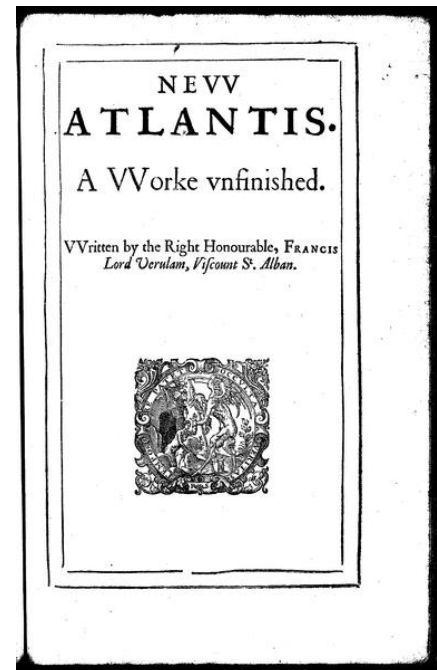
"The Preparations and Instruments are these. We have large and deep caves of several depths: the deepest are sunk six hundred fathom: and some of them are digged and made under great hills and mountains: so that if you reckon together the depth of the hill and the depth of the cave, they are (some of them) above three miles deep. For we find, that the depth of a 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, indurations, 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.

Industrial Kilns

"We have burials in several earths, where we put diverse cements, as the Chinese do their porcelain. But we have them in greater variety, and some of them more fine.

Mountaintop Observatories

"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; accounting 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 insolation, refrigeration, conservation; and for the view of divers meteors; as



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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.

Fish Farms; Desalinization Plant

"We have great lakes, both salt, and fresh; whereof we have use for the fish and fowl. We have also pools, of which some do strain fresh water out of salt; and others by art do turn fresh water into salt.

Wind and Water Power

"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 vapor 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 going diverse motions.



Chemical Plant

"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.

Giant Cloud Chambers

"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.

Hospital/Health Spa

"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; and others for the confirming of it in strength of sinews, vital parts, and the very juice and substance of the body.

Experimental Farm

"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 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 great variety of composts and soils, for the making of the earth fruitful.

Bioengineering Center

"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 we 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, as physic. By art likewise, we make them greater or taller 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 different 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 bests 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 silk-worms and bees.

Pharmaceutical Factory

"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.

Factories

"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 dies, 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.

Smelters

"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 dungs; 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.

Optical Lab

"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 rain-bows, (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 rain-bows, halo's, and circles about light. We represent also all manner of reflexions, 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 kinds; 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.

Acoustical Lab

"We have also sound-houses, where we practise and demonstrate all sounds, and their generation. We have harmonies 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, together 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 also means to convey sounds in trunks and pipes, in strange lines and distances.

Perfume Factory

"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 outs 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 sweet-meats, dry and moist; and divers pleasant wines, milks, broths, and sallets; in far greater variety than you have.

Machinery, Weapons Manufacture, Air and Sea Vessels

"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 mixtures and compositions of gun-powder, wild-fires burning in water, and unquenchable. Also fireworks 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 subtlety.

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

CGI

"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 seem 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 all affectation of strangeness.

Research Scientists

"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 Depredators.

"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 practise 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 whole 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.

STEM students

"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 women. 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 sometimes to the state and some not.

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