

## Francis Bacon: Prophet of the Modern Park

**E**arly in the seventeenth century, the Elizabethan Francis Bacon composed a fresh vision of utopia set somewhere on a group of islands in the South Seas westward of the New World. In his model for a new society he envisioned having

*Parks and Enclosures of All Sorts of Beasts and Birds: which wee use not only for View and Rarenesse, but likewise for Dissections and Trials: That thereby we may take light, what may be wrought upon the Body of Man* (Bacon 1915:38)

He outlined a similar entity for water:

*Wee haue also Particular Pooles, wher we make Trialls upon Fishes, as we haue said before of Beasts, and Birds* (Bacon 1915:39).

Research expeditions were to be regularly sent out from this "New Atlantis" to gather the best of humankind's knowledge to be housed and used in a College of the Six Days' Works, which had the dual purpose of improving science and technology. "The End of our Foundation," Bacon declared, "is the Knowledge of Causes and secret motion of things; and the enlargement of the bounds of Human Empire, to the effecting of all things possible" (Bacon 1915:36). In society's future social and political condition, wildlife would be preserved, viewed, and used for scientific research in bounded, protected areas called parks. It was a prophetic call for a form of land use that did not exist in the Western world in his day, except partially in a few botanical and zoological gardens. The full concept

of the park Bacon envisioned would not wholly emerge for another 250 years when Yellowstone National Park was created in 1872.

Bacon called for the scientific investigation of nature for the "relief of man's estate." This led to three centuries of an unprecedented rate of technological expansion. The evolutionary biologist Ernst Mayr says: "Bacon's great merit [to the changing milieu of biology], however, was his unceasing questioning of authority and his emphasis in the incompleteness of our knowledge, in contrast to medieval belief that knowledge was complete" (Mayr 1982:95-96). Charles Darwin testified on his debt to Bacon by saying he followed the true Baconian method in his work. This resulted in the complete rethinking of humankind's concept of the

world and itself. The seventeenth-century English philosopher, John Locke, who laid the epistemological foundations of modern science, is generally recognized as a dedicated Baconian (Wood 1975:82-83). Locke incorporated the important Baconian elements of emphasis on observation, experience, experiment, and the superiority of the senses over intellect as a source of knowledge. Science is to be practical and useful.

It was part of Bacon's utopian design to achieve dominion over nature by progressive discoveries. Bacon advocated a new concept and use for nature which was utilitarian. In developing a philosophy of his own, Bacon thought in terms of natural history. "But generally speaking," he writes, "science is to be sought from the light of nature, not from the darkness of antiquity. It matters not what has been done; our business is to see what can be done" (Bacon 1966:69). Parks were to be part of this scheme in the studying of nature for humankind's benefit.

Bacon left no details on how large the parks would be, where they might be located, the particular landscape within, or how they would be managed. There is one brief indication by him of a park related to research when he recommends to a Thomas Bushnell: "Let Twitnam Park ... be purchased ... for a residence for such deserving people to study in, since I experimentally found the situation in the place, much convenient for the trial of my philosophical conclusions" (Green 1952:274). This

would indicate a research facility set in a manor park atmosphere. Francis Bacon seldom concerned himself with the details of design in any of his catalogue of suggested areas of study concerning science. Others could carry forth the implementation of his ideas. He would provide the framework. He would implant the germ-cell to realize his vision of command over nature. This would be accomplished under ideal political machinery with the appropriate institutions. This he sketchily outlined in *New Atlantis* as a cooperative activity undertaken between the State, scientists, and inventors.

### The Prophet

Francis Bacon was the prophet of the modern national park in what it did become—a place where nature is preserved and protected to view wildlife and other natural objects, and where scientific research could be conducted and its findings incorporated into organized scientific theory. His concept included studying nature in the wild, under controlled conditions created by the researcher. He envisioned a varied array of appropriate structures: caves, towers, lakes, experimental laboratories, gardens, zoos, aquaria, parks, kitchens, furnaces, engine-houses, and almost everything people could conjure up to "effect all things possible."

Under Bacon's philosophical influence, the park concept began one of its most dramatic transformations: from being a pleasuring ground for hunting and amenity toward the later

national park, scientific reserve, and wilderness areas types (Henneberger 1996:128-133). This was part of the larger transformation of Western society toward Modernism—a historical movement that begins with the Renaissance and extends to the present.

Dramatic social, political, economic, and religious changes were occurring: the Reformation; the beginning of the end of the power of kings; the start of the scientific revolution by such thinkers as Galileo, Copernicus, and Kepler; the age of voyages that turned up flora and fauna not mentioned in the Bible; the invention of printing and gunpowder; and the emphasis on individual will underlying major advances in the arts, political thought, scholarship, and science.

Known to Bacon were the Continental and English private and university botanical and zoological gardens. The modern botanical garden originated in the sixteenth century in Europe, and may be considered from two perspectives: "In one view, they have been conceived as enclosed and carefully cultivated sanctuaries, wherein the world is represented in microcosm as a re-created Eden, providing a metaphoric oasis in a bewildering city. The other perspective characterizes botanical gardens as breakers of boundaries, custodians of the natural world. These gardens see themselves as a part of a larger network of habitable places, setting an example for wise and proper stewardship of the environment" (Byrd

1989:44). The Renaissance botanical and zoological garden brought forth the attributes of the royal pleasure garden and the parks of the ancient Egyptian Akhenatan in the collection of birds, other animals, and plants. They also followed the Babylonian and Assyrian kingships' zoological and plant collection prototypes composed of rare specimens that showed off wealth and power. To this was added the medicinally oriented horticultural and physick gardens of the monastic Middle Ages.

The Ortho Botanica, founded in 1545 at Padua, Italy, was the basic model. It was a two-acre garden with a four-square motif evoking the Biblical interpretation of the Garden of Eden. There was an attempt to order the world by setting four equal and square plant beds within a circular wall. This garden type became attached to universities at Pisa, Florence, and Bologna, at the University of Leiden, in Leipzig, and, in 1621, at Oxford. They were used for a variety of scientific, educational, and aesthetic pursuits (Byrd:44).

The Oxford garden was undoubtedly known to Bacon. His interest in establishing a new institution of learning that would contain a scientific garden had begun in 1592 when he asked Queen Elizabeth to support a research center that would contain a research library, a botanical garden, a zoo, a laboratory, and a museum devoted to inventions. These facilities were to be under a Minister for Science and Technology. Elizabeth was not impressed. In 1608, when he was

solicitor-general under King James, he recommended Magdalene College at Oxford as a venue for natural history research and writing. But he was unsuccessful. He was not able to obtain stability of political position long enough to accomplish creation of his research center.

### **Bacon's Life**

Bacon was quite familiar with the gardens and parks of his day, for he moved in the circles of the privileged aristocracy who exclusively enjoyed the deer parks and amenity areas connected to palaces and manor houses. He was born in London in 1561 and educated as a lawyer. His life was a peculiar combination of pusillanimity and grandeur. He held high offices, but stooped to the meanest of things, and was guilty of all sorts of irregularities and unscrupulous dealings. After dismissal by King James, he retired to his country home and devoted the rest of his life to literature, philosophical speculation, science, and gardening. His writings touched almost every subject of study. He brought eager curiosity and efficient insight into all topics of the day, being at once historian, essayist, logician, and writer on almost all known branches of science.

Bacon is highly recognized for his thoughts on the Renaissance garden. In his essay "Of Gardens" he presented a vision of what the garden should be, not quite what it actually was in Elizabethan times (Bacon 1942:190-198). His personal interest in nature lay within the gardens con-

nected to his Gorhambury estate. He spent much time glorifying it, until his conviction on bribery charges while Lord Chancellor forced him to sell it. Like the great Tudor houses, Gorhambury was backed and overtopped by a plantation park which provided an atmosphere of prim seclusion. Bacon liked to do his thinking in the open air. It is here that the utopian concept of *New Atlantis* extended the Elizabethan park to include the preservation of nature for viewing, rareness, and scientific investigation.

### **The Baconian Legacy**

Bacon's influence was immense on the individuals who made the great mechanical improvements between 1600 and 1900. Anthony Wallace has traced the lives of many of these inventors, connecting their work to research and development institutions described in *New Atlantis*, particularly in the areas of naval ordnance, the steam engine, deep-shaft coal mining, and the transition in making iron from charcoal (Wallace 1982). Wallace holds that the Bacon's vision of the college was the prototype of all modern research and development institutions.

Bacon laid the groundwork for the modern park (as he did for naval ordnance) by stimulating others to undertake exploration in various fields. Specifically, his contribution to the later American national park idea lies in his influence on the beginning of scientific humanism, the Royal Society of London, the Paris Academy,

and the later Encyclopedists. These were major outgrowths of many seventeenth-century efforts to organize science on a new footing. All shared a commitment to the program of scientific activity and the production of knowledge advocated by Bacon (McClellan 1985:48). Bacon's contribution lay in the area of effective collection and presentation of significant ideas. The forces of change were already underway when Bacon opted for a new age to be brought on by emerging technologies. There was a widening of education, the proliferation of ideas, and a rise in experimental science that that was embraced by English Puritans and incorporated into their outlook as an integral part of plans for economic development. Scores of colleges of science were established following Bacon's death. His name was regularly invoked as the patron saint of science. *New Atlantis* went through eight editions in the first fifty years after his death. His utopian college served as a model for new scientific institutions on the Continent and in the New World.

### To American Shores

The Royal Society, the Puritan influence, and European scientific institution prototypes were taken to America to be absorbed by such notable figures as Cotton Mather, Benjamin Franklin, and Thomas Jefferson. Many Americans held the position of Fellow of the Royal Society. The Colonies formed their own scientific societies, which stimulated a tremendous undertaking of investiga-

tions in natural history, mechanical devices, physics, exploration, and surveys, culminating in the "Great Surveys" of the West between 1867 and 1879. Several expeditions to the Yellowstone region contributed to the creation of Yellowstone National Park in 1872 (Walsh 1994:252-285). These geographical expeditions, embracing topography, geology, and the natural sciences, laid the basis for scientific knowledge of nature in the West.

### The Bacon-Jefferson-Yellowstone Connection

Jefferson and John Quincy Adams read Bacon, as did Washington, Daniel Webster, Lincoln, Thoreau, and Emerson. Jefferson thought Bacon to be one of the three greatest men that ever lived (Jefferson 1788:(14)561). The other two were Locke and Isaac Newton. Jefferson followed the Baconian empirical method of inquiry in his studies of the natural sciences. Jefferson and Adams were in a position to begin the direction of reserving public domain land by initiating the Naval Forest Reservations that sought to conserve live oak for ship-building purposes. They were forerunners of the later Hot Springs, Yosemite, and Yellowstone reservations.

Jefferson is the bridge between the Baconian stimulus of natural scientific investigations and the creation of Yellowstone. The three elements of the park outlined in *New Atlantis* appear in Yellowstone: viewing of wildlife, rareness, and scientific in-

vestigation. These are fundamental to the modern park. Several critical factors leading to Yellowstone were formulated by Jefferson. One was the initiation of the public lands reservation concept. A second was the exploration and study of the West that were to reveal the grandeur and scientific value of Yellowstone. The third was his part in the creation of the mythology important to the inauguration of the national park entity. These became coupled with the acknowledgment of the destructive effects on the natural resources of the West, and the desire for pleasuring grounds to satisfy a developing affluent society.

Jefferson is said to have invented much of what we now call "the American West." When president, he purchased the Louisiana Territory, and dispatched the Lewis and Clark and Pike expeditions to the West. Jefferson "invested the lands west of St. Louis with a particular character and a unique set of expectations" (Ronda 1997:xi). The third element important to the national park came into place upon Jefferson's consolidation of the national mythology. "The conquest of the western frontier—the generative source of the mythic narratives that have defined how we envision ourselves as a people since the earliest days of the re-

public—is a Jefferson-inspired epic. The idealized images of a virgin land untainted by Old World corruptions, of yeoman farmers transformed into "Americans" by the frontier experience: these are stories that converge in our national mythology of nineteenth-century continental expansion. And all of these stories," holds Robert A. Williams, Jr., "are found in their most quintessential American tellings and retellings in the writings of Thomas Jefferson" (1997:51).

Enlightenment, democracy, national mythology: All bore on the development of the expansive Western national parks that became bearers of the mythology of free individuals who had conquered a wild country. There was the urge to save some of the wild country that created the mythology.

Francis Bacon is held to be a prophet because of his visionary insight and contributory influence on persons and activities who played roles in developing various aspects of the modern national park—especially the idea that parks should preserve rare species for viewing and scientific research. Such activities would be conducted within the framework of the park as a public institution. National parks were thus created. Yellowstone became the model for national parks throughout the world.

### References

- Bacon, Francis. 1915. *New Atlantis: A Work Unfinished (1627)*. Authorized facsimile of the original book, edited by Alfred B. Gouge. London: Oxford University Press.
- . 1942. *Essays and New Atlantis*. New York: Walter J. Black.

- . 1966. *Temporus Partus Masculus*. Trans. by Benjamin Farrington. In *The Philosophy of Francis Bacon*. Chicago: University of Chicago Press, Phoenix Edition.
- Byrd, Warren T. 1989. Re-creation and Recreation. *Landscape Architecture* 79 (January), 44.
- Jefferson, Thomas. 1958. Letter to John Trumbull, Paris, February 15, 1788. In *The Papers of Thomas Jefferson*. 22 vols. Princeton: Princeton University Press. Vol. 14, 561.
- Green, A. Wigfall. 1952. *Sir Francis Bacon: His Life and Works*. Denver: Alan Swallow.
- Henneberger, John W. 1996. Transformations in the Concept of the Park. *The Trumpeter* 13:3 (Summer), 128-133.
- Mayr, Ernst. 1982. *The Growth of Biological Thought*. Cambridge: The Belknap Press of the Harvard University Press.
- McClellan III, James E. 1985. *Science Reorganized: Scientific Societies in the Eighteenth Century*. New York: Columbia University Press.
- Ronda, James P. 1997. Introduction. In *Thomas Jefferson and the Changing West: From Conquest to Conservation*. Edited by James P. Ronda. St. Louis: Missouri Historical Society Press.
- Wallace, Anthony. 1982. *The Social Context of Innovations*. Princeton: Princeton University Press.
- Walsh, Jim. 1994. Yellowstone National Park: The first of many, the grandest of all. Pp. 252-285 in *Exploration and Mapping of the National Parks*, Jennie Marie Johnson (ed.). Winnetka, Illinois: Speculum Orbis Press.
- Williams, Jr., Robert A. 1997. Thomas Jefferson: Indigenous American Storyteller. Pp. 42-74 in Ronda 1997.
- Wood, Neal. 1975. The Baconian character of Locke's essay. *Studies in History and Philosophy of Science* 6:1 (April), 82-83.

**John W. Henneberger**, 3256 NW Harrison Boulevard, Corvallis, Oregon 97330

