GENERAL SCIENCE

Jefferson, Man of Science

His "supreme delight" led him into study of geography, geology, botany, zoology, medicine, agriculture and chemistry. Was an inventor.

See Front Cover

➤ CONJURE UP in your mind's eye five images of Thomas Jefferson, whose birth on April 13, 1743, 200 years ago, is being celebrated this year. Stand them side by side. In the center is Jefferson the lawyer, statesman and public servant. To the right is Jefferson the music-lover, violinist and singer; and Jefferson, the horseman and lover of outdoor sports. To the left stands the scientist and inventor, and also the landowner and farmer.

These five Jeffersons together constitute the man whom history records as one of the most versatile persons in America's early days. His music and his horsemanship were his recreation. His inventions were his hobby. His "tranquil pursuit of science" was his "supreme delight," to use his own words. He inherited nearly 2,000 acres of land and added another 3,000 by purchase. His father-in-law left him a 5,000-acre plantation to manage as an additional farming activity.

As a scientist Jefferson was interested in many branches; geography, geology, botany, zoology, medicine, agriculture, chemistry and the natural sciences. The practical side of all these appealed to him. He once wrote, "I have wished to see chemistry applied to domestic objects, to malting, brewing, making cider, bread, butter, cheese, soap, and the incubation of eggs."

Was Paleontologist

Although the subject had not yet been named, Jefferson was a great early paleontologist. The fossil remains and the bones of prehistoric animals delighted him. He secured a number of the bones of an animal about the size of a bull moose found in a cave in Virginia. Because they included a large claw he called the animal the "big-claw" or Megalonyx. The bones were sent to Philadelphia and the animal "reconstructed." They are still there with the Academy of Natural Sciences. The animal was a giant ground sloth, extinct for some 30,000 years.

Jefferson collected many prehistoric bones through friends in Ohio, Kentucky and elsewhere. His great interest in paleontology was awakened by his contacts in Paris with leading scientists; in the days when Jefferson represented the United States government there, Paris was the center of the sciences, particularly botany and zoology.

Thomas Jefferson, while president and at other times, seems to have had a keen sense of the important part science would play in the future of the American nation. His foresight is responsible for much of the scientific work done by the government then and later. He is credited with being the originator of the patent system. The idea of a National Bureau of Standards is in a report by him to Congress in 1790. The report suggests plans for establishing uniformity in the coinage and weights and measures of the United States.

Wanted Coast Survey

In 1806 President Jefferson recommended a coast survey, on which Congress took favorable action in February 1807. The continuation of this survey work is carried on by the Coast and Geodetic Survey. Other recommendations had much to do with the establishment later of the Naval Observatory, the Hydrographic Office and the Weather Bureau.

Further evidence of Jefferson's great interest in the sciences is shown by two exploratory trips which he made possible. He sent Col. Zebulon Pike to explore the peak that now bears Pike's name. He asked Congress to authorize the expedition of Lewis and Clark. He paid from personal funds $2,500 to help finance the trip. The report of these two men, made from their notes written daily while traveling up the Missouri River and crossing to the Pacific, is filled with scientific observations resulting from instructions received by them from the President.

Jefferson as an inventor never took out a patent. In a large measure he is responsible for the creation of the U. S. Patent law and he was the first administrator of the law. Under it patents were issued by a board composed of the Secretary of State, the Secretary of War, and the Attorney General. He was Secretary of State and chairman of the board. The work in connection with patenting was carried out in the State Department and the books and records kept there. Jefferson and his contemporary inventor, Benjamin Franklin, both decided to contribute their inventive genius to their country and to their fellowmen as they contributed their abilities in affairs of state.

Improved the Plow

Scientific principles were the basis of many of Jefferson's inventions. The moulding board of a common plow may not seem to be scientific but it is. Jefferson sought a proper shape to turn the soil with the least effort, to break the soil properly, aerate it, and to cover the turned-in vegetation to add humus to the land. It was certainly regarded as a scientific achievement by several French scientific societies which awarded him honors for his invention.

His pedometer sounds more scientific. With it a distance could be measured roughly by walking it. A recording instrument was carried in the watch pocket. A tape led from the instrument through a hole in the bottom of the pocket, down "between the breeches and drawers" to a knee band. This recorded every step taken, by one leg at least.

Jefferson's "whirligig" chair may not be a scientific device but it was an important invention. It is the great-great-grandfather of all the swivel chairs for which Washington is famous and without which perhaps modern governments could not exist. A combination walking-stick and outdoor seat did not prove as prolific. His hemp machine for breaking and beating hemp into fiber is one of his greatest inventions.

Architecture is a science. Jefferson's great work as an architect was the designing of the original buildings of the University of Virginia, still standing and in use. It is his greatest memorial. Monticello, his home, is also his work. American people are familiar with its outline, as it is now on one face of the new Jefferson five-cent piece.

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Ramie shrubs which grow all over China and can be grown in the United States, produce a fiber eight times as strong as cotton that has high lustre, takes dye, resists moisture, and can be spun and woven with existing machinery.