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Alexander Humboldt Made An Epic Journey Of Discovery In Americas

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Alexander von Humboldt seemed to know just about everything.

The 34-year-old German explorer dropped by the White House in 1804 to chat with President Thomas Jefferson, who was always eager to corner anyone with new scientific information.

Humboldt had spent the prior five years traveling 6,000 miles through Latin America and was on his way back to Europe. Treasury Secretary Albert Gallatin joined them in discussions and "swallowed more information of various kinds in less than two hours than I had for two years past in all I had read and heard."

"Von Humboldt was arguably the greatest scientist and thinker of his day," **George Haley**, a professor in the College of Business at the University of New Haven (Conn.), told IBD. "The tremendous breadth of his genius included being the top expert on the flora and fauna of South America, a groundbreaking geographer and mapmaker, a pioneering geologist and meteorologist. And later in life, he would become a cosmologist, studying the universe as a whole. His discoveries had tremendous practical benefit to science, governments and people in general."

Rise In Europe

Humboldt (1769-1859) often left out the aristocratic "von" from his name because he didn't want anyone to think he believed he was superior as a member of the Prussian nobility. His father was a major in the army who was awarded the position of royal chamberlain at the court in Berlin. Alexander's mother was the widow of a baron who brought his fortune into her second marriage.

Humboldt was always fascinated by nature and amassed a great collection of specimens as a child, but after father died when he was 10, his mother felt a career in science wasn't practical. She decided he should study law and finance so he could serve in the government. So he attended top universities from 1788 to 1792. Then he was appointed an inspector of mines, and he did his duties so well that he was quickly given the top post in the department. In his free time, he traveled around Europe studying nature.

In 1796, his mother died and he left his job to prepare for his dream of conducting a voyage of scientific discovery. He and a botanist friend, Aime Bonpland, decided to go to Spain to appeal to King Charles IV to authorize an expedition into the largely unexplored interior of the colonies in South America. Outsiders hadn't been allowed to explore freely there for 60 years because Spain wanted to keep the locations of its mines secret. But Humboldt offered to finance the trip, and King Charles hoped he would find new sources of gold and silver.

Humboldt and Bonpland landed in what is now Venezuela in July 1799 with baggage that included 40 cutting-edge scientific instruments.

"We are in a divine country," wrote Humboldt to his brother. "We run around like the demented. In the first three days, we were quite unable to classify anything. ... Bonpland keeps telling me he will go mad if the wonders do not cease soon."

Huge Collection

Humboldt and Bonpland spent three months mapping the coastal plains, collecting 1,600 plants, 600 of them new species.

The sky looked different from what they saw in Europe, with one spectacular meteor shower than went on for hours.

In the middle of an earthquake, Humboldt got out his instruments to measure it.

They risked death in letting themselves be shocked by electric eels in order to write about the effects.

Then there were the crocodiles, armies of mosquitoes, poisonous plants and typhoid.

“They paddled up the Apure River to its confluence with the Orinoco and there commenced their major effort -- they would trace it to its source to establish that there is a connection with the Amazon,” wrote David McCullough in “Brave Companions.” “They spent 75 days in open boats or canoes traveling through one of the most difficult and little-known places on earth. ... Sometimes they could make almost no way against the current, they and their Indian guides rowing strenuously for 14 hours to go all of nine miles. The smothering humidity and torrential rains destroyed most of their provisions. For weeks they lived on bananas and ants, or on an occasional fried monkey.”

On To Cuba

In November 1800, they went to Cuba to study the works, including the people, for several months. They then sailed to what is now Colombia and up a river toward the Andes.

“Humboldt and Bonpland climbed nearly to the top of the highest mountain in the world known at the time, Chimborazo, reaching 19,286 feet without special equipment,” said Vejas Liulevicius, author of the Great Courses’ audiovisual program “History’s Greatest Voyages of Exploration.” “That was a world record that would last for 30 years. Humboldt studied volcanoes and correctly theorized that they appeared at geological fault lines.”

After a year in Mexico, the duo headed home by way of Washington, D.C., where they stayed for six weeks before sailing to France, arriving in August 1804. Their massive collection (60,000 plants alone) was divided up to send back on three ships to ensure at least some of it arrived (one of the ships did sink).

After taking care of personal affairs in Berlin for a couple of years and additional experiments and trips, Humboldt settled in Paris in 1808, expecting to write up his report within two years. Instead, it would take three decades, with the last of his 30 volumes of “Voyage to the Equinoctial Regions of the New Continent” published in 1834. He also wrote a chronological travelogue version, “Personal Narrative of Travels,” in seven other volumes from 1813 to 1831, but got only halfway through the account.

Among His Achievements

He doubled the number of plants known to Europeans.

He discovered the weakening of the magnetic field from the poles to the equator and went on to create stations around the world to measure geomagnetism.

He explained how trees attract rain, release oxygen and protect soil.

He laid the foundation of the science of geography, proving that the theory that all mountains had been made at one time was wrong.

He came up with the idea of similar climate and vegetation zones around the world.

He made important contributions to meteorology (weather forecasting), such as inventing isotherms and isobars, the lines of temperature and pressure, respectively, on modern weather maps.

“Personal Narrative” was credited by Charles Darwin for inspiring his 1831-36 world voyage, which enabled him to conceive the theory of evolution. He called Humboldt “the greatest scientific traveler who ever lived.”

By 1827, Humboldt was running out of money publishing the two books and, wrote McCullough, would end up paying \$226,000 (equivalent to \$6.5 million today) just for printing. He reluctantly accepted appointment as the royal chamberlain at the Prussian court to pay the bills.

Deep Into Russia

Two years later, at age 60, he grabbed an invitation from the Czar to explore Russia, a 9,600-mile round trip to Siberia that he would write up in 1843.

And from Berlin, he was frequently sent on diplomatic missions to the king of France from 1830 to 1848.

He was also a voluminous correspondent with other scientists over his long career, with 50,000 of his own letters preserved and twice as many from others.

Apparently all that didn't keep him busy enough, since he wrote and published the first of five volumes of "Cosmos: A Sketch of the Physical Description of the Universe" in 1845 (the last would appear posthumously).

"It was the culmination of his working life, the first volume a thrilling journey through the external world, bringing together distant nebulae, erupting volcanoes, the geography of plants and humans," wrote Andrea Wulf, author of "The Invention of Nature: Alexander Von Humboldt's New World." "The second volume was a voyage of the mind through history, from the ancient Greeks. The last three volumes were more specialized scientific tomes. 'Cosmos' was unlike any other book, and the world was electrified. Translated into a dozen languages, it became a best-seller in Britain and America."

Big Name

Humboldt was the most famous man in the world by the time he died at 89. More plants, animals, minerals and places were named after Humboldt than any other person in history.

"One of Humboldt's greatest achievements had been to make science accessible and popular," wrote Wulf. "Everybody learned from him: farmers and craftsmen, schoolboys and teachers, artists and musicians, scientists and politicians. There was not a single textbook or atlas in the hands of children in the Western world that hadn't been shaped by his ideas."

Humboldt's Keys

Made first scientific expedition through South America.

Overcame: Disease, crocodiles, dangerous rivers and torrential rains.

Lesson: See the big connection among all things in your field.

"Our happiness or unhappiness depends more on the way we meet the events of life than on the nature of those events themselves."

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