Appendix

“Philadelphia Abstract”
Alexander von Humboldt’s Report on the Exploration of the Americas (1799–1804)
Translating from the French by John Vaughan and edited by Frank Baron

Soon after Humboldt departed from Philadelphia for Europe, John Vaughan, secretary and librarian of the American Philosophical Society in Philadelphia, published his translation of Humboldt’s report on his exploration of the Americas in the journal of his society. Vaughan had been Humboldt’s host in Philadelphia and Washington when they were guests of Thomas Jefferson. Vaughan introduced his translation with a brief remark: “The following abstract of the American travels of the celebrated Baron Humboldt and his companion Bonpland, has been drawn up from notes which the former has kindly furnished, and will supersede the many very incorrect accounts hitherto published relative to this interesting subject.” Vaughan had received the French text with a message from Humboldt, who wrote from his ship as he was about to depart from the United States for Europe: “I am sending you, my dear honored friend, the French abstract of my travels, which I should like to have published in some journal. Be so kind as to translate it. Much has already been published on my expedition that is not correct, and this fixes the time periods much better. In the beginning I called attention to the correctness of the statements but I did not arrange them well. We are setting sail. Accept my sincerest thanks once more and regards to our friends. [Signed:] Humboldt. Saturday evening [July 7, 2004] – Newcastle.”
Baron Humboldt, having traveled as a naturalist since 1790 throughout Germany, Poland, France, Switzerland, and through parts of England, Italy, Hungary, and Spain, came to Paris in 1798, when he received an invitation from the directors of the national museum to accompany Captain Baudin in his voyage around the world. Aimé Goujaud Bonpland, a native of Rochelle, trained in the Natural History Museum of Paris, accompanied them. At the point of departure, owing to the renewed war with Austria and to the resulting lack of funds, the plan was suspended.

Intending to contribute to knowledge in the natural sciences, in 1792 Humboldt had conceived the plan to travel to India at his own expense. He hoped to join an expedition to Algiers and Egypt. His plan was to go to Algiers in a Swedish frigate with Consul Sköldebrandt, to take a caravan from Algiers to Mecca, and from there by the Persian Gulf to English East-India. In October 1798 the war between France and the Barbary powers broke out unexpectedly. Humboldt waited for two months fruitlessly at Marseilles. Impatient with this delay, and remaining firm in his determination to go to Egypt, he went to Spain, hoping to pass more readily under the Spanish flag from Carthagena to Algiers and Tunis. He took with him the large collection of philosophical, chemical, and astronomical instruments that he had purchased in England and France.

As a result of a happy concurrence of circumstances in February 1799 he obtained from the court of Madrid permission to visit the Spanish colonies of the two Americas, permission granted with a generosity and boldness that reflected honorably on the government and a philosophical age. After a residence of some months at the Spanish court, during which time the king showed a strong personal interest in the plan, in June 1799 Humboldt left Europe, accompanied by Bonpland, a passionate scientist with a
profound grasp of botany and zoology. It is with this friend that Humboldt has accomplished, at his expense, his travels in the two hemispheres, by land and sea, probably the most extensive that any individual has ever undertaken.

The two travelers left Coruña in the Spanish ship *Pizarro*, for the Canary Islands, where they ascended to the crater of the Peak of Teide and made experiments on the analysis of the air. In July they arrived at the port of Cumaná, in South America. In 1799, they explored the coast of Paria, the missions of the Chaima Indians, the provinces of New Andalusia, New Barcelona, Venezuela, and Spanish Guayana. (In New Andalusia they experienced a region that endured the most dreadful earthquakes. Despite its extreme heat it is the healthiest region in the world.) In January 1800, they left Caracas to visit the beautiful valleys of Aragua, where the great lake of Valencia recalls to mind the views of the lake of Geneva, embellished by the majesty of the vegetation of the tropics. From Puerto Cabello they crossed, to the south, the immense plains of Calobozo, Apure, and the Orinoco, as well as Los Llanos, a desert similar to those of Africa, where in the shade (from the reverberation of heat) Reaumur’s thermometer rose to 35° and 37° (111° to 115° F.) degrees. The level of the country for 2,000 square leagues does not differ five inches. The sand everywhere represents the horizon of the sea, without vegetation; and its dry bosom hides the crocodiles, and the torpid boa (a species of serpent)15. The traveling here, as in all Spanish America, except Mexico, is performed on horseback. They passed whole days without seeing a palm tree or the vestige of a human dwelling. At San Fernando de Apure, in the provinces of Barinas, Messrs. Humboldt and Bonpland began that fatiguing navigation of nearly 1000 marine leagues, executed in canoes, with the assistance of chronometers making a chart of the
country, the satellites of Jupiter, and the lunar distances. They went down the river
Apure, which empties itself into the Orinoco, at seven degrees of latitude. They
continued on the Orinoco (passing the celebrated cataracts of Atures and Maypures) the
mouth of the Guaviare. From thence they ascended the small rivers of [Atabapo],
Tuamini, and Temi. From the mission of Yavita they went by land to the sources of the
famous Río Negro, which La Condamine saw at the point where it joins the Amazon,
and which he calls a “sea of fresh water.” About thirty Indians carried canoes through
woods of Mani, Lecythis, and Laurus Cinamoides, to the Caño (or creek) of Pimichin.
It was by this small stream that the travelers entered the Río Negro, or Black River, on
which they took down to San Carlos, erroneously assumed to be below under the equator,
or just at the frontiers of Great Para, in the government of Brazil. A canal from Temi to
Pimichin, which from the level nature of the ground would present a fine internal
communication between the Para and the province of Caracas, a communication
infinitely shorter than that of Casiquiare. From the fortress of San Carlos on the Río
Negro, Humboldt went north up that river and the Casiquiare to the Orinoco, and on this
river to the volcano Duida or the mission of the Esmeralda, near the source of the
Orinoco. The Guaicá Indians (a race of men almost pygmies, very white and very
warlike) render fruitless any attempts to reach the source of the river.

From the Esmeralda, Humboldt and Bonpland went down the Orinoco, when the
waters rose, towards its mouth at San Thomas de Guayana, or the Angostura [Ciudad
Bolivar]. During this long navigation they were in a continued state of suffering, from
want of nourishment and shelter from the night rains, living in the woods, the stinging of
the infinite variety of mosquitoes, and the impossibility of bathing, owing to the
fierceness the crocodile and the little Carib fish, and finally the noxious influence of a burning climate. They returned to Cumaná by the plains of Cari and the mission of the Carib Indians, a race of red men very different from any other, and probably, after the Patagonians, the tallest and most robust in the world.

After remaining some months at New Barcelona and Cumaná, the travelers arrived in Havana, after a tedious and dangerous navigation, the vessel being in the night on the point of striking the Vibora rocks. For three months Humboldt remained on the island of Cuba, where he ascertained the longitude of Havana, and on the sugar plantations he constructed stoves that have since been generally adopted. Humboldt and Bonpland were on the point of setting off for Vera Cruz, intending, by way of Mexico and Acapulco, to go to the Philippine islands, and from there, if possible, by Bombay and Aleppo, to Constantinople, but then reports about Baudin’s movements alarmed them and made them change their plan. They received the news that this navigator would proceed from France to Buenos Aires, and from thence, by Cape of Horn, for Chile and the coast of Peru. Humboldt had promised Baudin and the museum in Paris that, wherever he might be, he would try to join the expedition, as soon as he knew that it had begun. He flattered himself that his researches and those of his friend Bonpland might be more useful to science, if united to the labors of the learned men who would accompany Captain Baudin.

These considerations induced Humboldt to send his manuscripts from 1799 and 1800 directly to Europe, and to board a small schooner at Batabanó, intending to go to Carthagena, and from thence, as quickly as possible, by the Isthmus of Panama, to the South Sea. He hoped to find captain Baudin in Guayaquil, or in Lima, and to travel with
him to visit New Holland and the islands of the Pacific Ocean, which were interesting because of the luxuriance of their vegetation and also for scientific considerations.

It appeared imprudent to expose the manuscripts and collections already made to the risks of this proposed navigation. For three years Humboldt did not know the fate of the manuscripts he had sent to Europe. Only upon his arrival in Philadelphia did he learn that all except one third had been lost in shipwreck. Fortunately, (except for the insects of the Orinoco and the Río Negro) they were only duplicates; but unhappily Friar Juan Gonzáles,\textsuperscript{11} a Franciscan monk, the friend to whom they were entrusted, perished with them. He was a very courageous young man who had a better acquaintance with the unknown world of Spanish Guayana than any other European.

Humboldt left Batabanó in March 1801 and passed to the south of Cuba, on which he determined many geographical positions. The sailing was slow because of the extremely calm sea, and the currents carried the little schooner too much to the west, towards the mouth of the Atrato (Golfo de Urabá). The vessel sailed into the Sinú River, where no botanist had ever visited before. Then they had a very difficult passage up to Cartagena. It was too late in the year for the South Sea navigation, and the project of crossing the isthmus was abandoned. Instead, wishing to make the acquaintance of the celebrated Mutis\textsuperscript{12} and being greatly interested in his immensely rich natural history collections, Humboldt made Bogotá his next destination. He passed a few weeks in the woods of Turbaco, and in forty days went up the beautiful river of Magdalena, the course of which he sketched.

From Honda, our travelers ascended through forests of oaks, \textit{melastoma},\textsuperscript{13} and \textit{cinchona} (the tree that yields the Peruvian bark),\textsuperscript{14} to Santa Fe de Bogotá, capital of the
kingdom of New Granada, situated on a fine plain, elevated 1,360 toises [8,699 feet] above sea level. Here they remained to see the superb collections of Mutis, the majestic cataract of the Tequendama (98 toises [627 feet] high), the mines of Mariquita, Santa Ana, and Zipaquirá, the natural bridge of Icononzo (three stones thrown together in the manner of an arch, by an earthquake). These curious objects prevented Humboldt and Bonpland from continuing their journey until the month of September 1801.

At this time, despite the rainy season, they undertook the journey to Quito and passed the Andes of Quindío, which are snowy mountains covered with wax palm trees (*palmiers à Cire*), with *passiflora* (passion flowers) of the growth of trees, *storax* [i.e., *styrax*], and *bambusa* (bamboo). They were, during thirteen days, obliged to pass on foot through places dreadfully swampy and without any traces of population.

From the village of Cartago, they made their way in the valley of Cauca and skirted Chocó, the country of platina, which is found there in round pieces of basalt and green rock (Grünstein of Werner,\textsuperscript{15}) and fossil wood. They passed through Buga to Popayán, a bishop’s see, and situated near the volcanoes of Sotará and Puracé, a most picturesque place. They enjoyed the most delightful climate in the world, Reaumur’s thermometer constantly at 16° to 18° (68° to 72° Fahr.) They ascended to the crater of the volcano of Puracé, whose mouth, in the middle of snow, throws out vapors of sulphurous hydrogen with continued and frightful rumbling.

From Popayán they passed by the dangerously narrow gorges of Almaguer, avoiding the infected and contagious valley of Patia, to Pasto, and from this town, even now situated at the foot of a burning volcano, by Túquerres and the province of Pastos, a flat area, fertile in European grain, but elevated more than 1,500 to 1,600 toises [9,594 to
10,234 feet] above the towns of Ibarra and Quito.

They arrived in January, 1802, at this beautiful capital, celebrated by the labors of the illustrious La Condamine, Bouguer,16 Godin,17 Juan,18 and Ulloa,19 and still more celebrated by the great amiability of its inhabitants, and their warm support of the arts.

They remained nearly a year in the kingdom of Quito: the height of its snow-capped mountains, its terrible earthquakes (that of February 7, 1797, swallowed up 42,000 inhabitants, in a few seconds), its fertility, and the manners of its inhabitants, continued to render it the most interesting spot in the universe. After three vain attempts, they succeeded twice in ascending to the crater of the volcano of Pichincha taking with them electrometers, barometers, and hygrometers. La Condamine could stop here only a few minutes, and then without instruments. At this time the immense crater was cold and filled with snow. Our travelers found it inflamed; distressing information for the town of Quito, which is only 5,000 to 6,000 toises [31,980 to 38,376 feet] away.

They made separate visits to the snowy and porphyritic mountains of Antisana, Cotopaxi, and Tungarahua, as well as Chimborazo, the highest point of our globe.20 They studied the geological part of the Cordillera of the Andes, on which subject nothing has been published in Europe, mineralogy (if the expression may be used) having been created, as it were, since the time of La Condamine. The geodetic measurements proved that some mountains, particularly the Tungarahua Volcano, have considerably lowered since 1750, as inhabitants have observed.

During the rest of the journey, Humboldt and Bonpland were accompanied by Charles Montúfar, the son of the marquis of Selva Alegre, of Quito21, a person zealous for the progress of science. At his own expense, he is rebuilding the pyramids of
Yaruquí, the object of a celebrated dispute\textsuperscript{22} of the Spanish and French academicians.\textsuperscript{23} Having followed Humboldt in the remainder of his journey through Peru and the kingdom of New Spain, this interesting young man is now on his passage with him to Europe.

Circumstances were favorable to the efforts of the three travelers. At Antisana they ascended 2,200 French feet [2,346.7 English feet]. On June 22, 1802, they climbed the almost to the summit of the Chimborazo, nearly to 3,200 French feet [3,413.3 English feet] higher than La Condamine. They ascended with instruments to an elevation of 3,036 toises [19,418 feet] above sea level. Their eyes, lips, and gums were bloody. An opening of 80 toises [512 feet] deep, and very wide, prevented them from reaching the top, from which they were only 134 toises [857 feet] away.

At Quito, Humboldt received a letter from the National Institute of France. The letter informed him that Captain Baudin was on the way to the Cape of Good Hope and that there was no longer any hope of joining him.

After having examined the country overturned by the earthquake of Riobamba in 1797, they passed by the Andes of Azuay to Cuenza. The desire to compare the cinchona barks discovered by Mutis at Santa Fe de Bogotá with those of Popayán and the cuspa and cuspare of New Andalusia and the river Caroni (named falsely Corteza Angostura)\textsuperscript{24} with the cinchona (barks) of Loxa and Peru, caused the explorers to deviate from the beaten track from Cuenza to Lima. With immense difficulties in transporting their instruments and collections they passed by the forest (páramo) of Saraguro to Loja and from thence to the province of Jaén de Bracamorros. In two days they had to cross the dangerous Huancabamba River thirty-five times. They saw the ruins of the superb Inca
road, comparable to the finest roads in France, which went along the ridge of the Andes from Cusco to the Azuay, accommodated with fountains and taverns.

They descended on the Chamaya River, which led them into to [the tributaries of] the Amazon River, and they navigated this last river down to the cataracts of Tomependa an area with one of the most fertile, but also hottest climates of the habitable globe. From the Amazon tributary they returned to the southeast by the Cordilleras of the Andes to Montán, where they found they had passed the magnetic equator, where the inclination was 0, although at a latitude of seven degrees south. They visited the mines of Hualguayoc, where native silver is found at the height of 2,000 toises [12,792 feet]. A few veins of these mines contain petrified shells, and are, with those of Pasco and Guantajaya, actually the richest of Peru. From Cajamarca they descended to Trujillo, close to the ruins of the Peruvian city of Mansiche.

During this western descent of the Andes the three voyagers experienced the pleasure of seeing the Pacific Ocean for the first time. They passed its barren coasts, formerly watered by the canals of the Incas at Santa, Huarmey, and Lima. For a few months they remained in the interesting capital of Peru, where inhabitants are active intellectually and display a liberal spirit. Humboldt had the good fortune to observe the end of the passage of Mercury over the sun’s disk at the port of Callao. He was astonished to find, at such a distance from Europe, the most up-to-date knowledge of chemistry, mathematics, and medicine. He found intense intellectual activity among the inhabitants, who, in a climate where it never either rains or thunders, have been falsely accused of indolence.

From Lima the travelers passed by sea to Guayaquil, situated on the brink of a
river, where the palm trees are beautiful beyond description. They heard persistent rumbles from the volcano Cotopaxi, but on January 6, 1803, it made an alarming explosion. The travelers immediately set off to visit the volcano for a second time, when, after being exposed for seven days to the dreadful attacks of the mosquitoes of Babahoyo and Ujibar, the unexpected news about the imminent departure of the frigate *Atlanta* caused them to return.\(^\text{25}\)

They had a fortunate passage on the Pacific Ocean to Acapulco, the western port of the kingdom of New Spain, famous for the beauty of its harbor. It appears to have been formed by earthquakes at the expense of misery for its inhabitants, who also endure a climate that is just as hot as it is unhealthy.

Originally, Humboldt had the intention of remaining for only a few months in Mexico, and then to hasten back to Europe. His voyage had already been too protracted, and his instruments, particularly the chronometers, had begun to fail, and every effort to have new ones sent to him was unsuccessful. Because science had made rapid progress in Europe during the journey of four or five years, a further consideration was the great risk of publishing the results of Humboldt’s labors when they might no longer be interesting. Humboldt hoped to be in France in August or September, 1803, but the attractions of a country, so beautiful and so varied, the great hospitality of its inhabitants, and the fear of yellow fever, often fatal from June to November for those who come from the mountainous parts of the country, led him to stay a year in this kingdom.

The travelers ascended from Acapulco to Taxco, a place celebrated for its mines, which are as interesting as they are ancient. The men climbed gradually from the blazing valley of Mescala and Papagayo, where the temperatures of Reaumur’s thermometer
range constantly from 28° to 31° (95° to 101° Fahr.) to a region 600 or 700 toises [3,838 to 4,477 feet] above sea level, where you find oaks and pines, and the fougere (fern) are as large as trees, and where European grains are cultivated. They passed through Taxco and Cuernavaca on the way to the capital of Mexico. This city, of 150,000 inhabitants, is situated on the ancient site of Tenochtitlán, between the lakes of Texcoco and Xochimilco, lakes that have become smaller since the Spaniards have opened the Huecheutoca canal in sight of two snow-topped mountains, of which one, Popocatépetl, is even now an active volcano, surrounded by a great number of walks, trees, and Indian villages.

This capital, situated 1,160 toises [7,419 feet] above sea level in a mild and temperate climate, may doubtless compare to some of the finest cities in Europe. Great scientific establishments, such as the Academy of Painting, Sculpture, and Engraving; the College of Mines, (owing to the liberality of the Company of Miners of Mexico); and the Botanical Garden do honor to the governments that created them.

After a few months in the valley of Mexico and after determining the longitude of the capital, which had been recorded with an error of nearly two degrees, the travelers visited the mines of Morán, Real del Monte. They also saw the Cerro of Oyamel [Cerro de las Navajas], where the ancient Mexicans manufactured knives from obsidian. Soon afterwards they passed through Querétaro and Salamanca to Guanajuato, a city of fifty thousand inhabitants celebrated for its mines, richer than those of Potosí. Count Valenciana’s mine, which has a perpendicular depth of 1,840 French feet [1,963 English feet], is the deepest and richest mine of the universe.
This mine alone consistently yields an annual profit of nearly six hundred thousand dollars.

From Guanajuato they returned by way of the valley of Santiago to Valladolid [today: Morelia], in the ancient kingdom of Michoacán, one of the most fertile and charming provinces of the kingdom. They descended from Patzcuaro towards the coast of the Pacific Ocean to the plains of Jorullo, where, in one night in 1759 a volcano erupted and brought forth two thousand small streams. Smoke still continues to issue from it. The travelers almost reached the bottom of the crater, and they analyzed the air, which they found to be strongly impregnated with carbonic acid. They returned to Mexico City by way of the valley of Toluca and there visited the volcano and climbed to its highest point, 14,400 French feet [15,360 English feet] above sea level.

In January and February 1804, they conducted their researches on the eastern descent of the cordilleras, where they measured the mountains Nevados de La Puebla, Popocatépetl, Iztaccihuatl, the great peak of Orizaba, and the Cofre de Perote. At the summit of Cofre de Perote Humboldt observed the meridian height of the sun. Finally, after a brief sojourn in Jalapa, they began their journey to Havana from Vera Cruz.

In Havana they assembled the collections they had left there in 1801 and, after brief visits in Philadelphia [and Washington], they embarked for France, in July 1804. Their expedition of some six years yielded a collection of 6,000 different species of plants (most of which were unknown in Europe) and numerous mineralogical, astronomical, chemical, and moral observations. Humboldt accords the highest possible praise to the Spanish government for its liberal protection.
NOTES

1 For the original French text of this letter see the article by Helmut de Terra, “Studies of the Documentation of Alexander von Humboldt: The Philadelphia Abstract of Humboldt’s American Travels. Humboldt’s Portraits and Sculpture in the United States.” *Proceedings of the American Philosophical Society*, 102 (1958), p. 563. The translation of Humboldt’s abstract is found on pp 564–572. It was first published in *The Literary Magazine and American Register for 1804*, vol. 2, no 10, pp. 321–327. The translation, as reflected in these two independent transcriptions, contains mistakes, especially with respect to place names, with which Vaughan and de Terra were not familiar. With the aid of the original French text, available in the form of photocopies from the library of the American Philosophical Society (Thomas Jefferson papers), these errors have been corrected, and stylistic changes have been made. Geographical names have been modernized. Vaughan added a final sentence to his translation (“Baron Humboldt was born in Prussia, on the 14th of September 1769.”), which seems out of place and is not contained in the original French text.

2 Nicolas Thomas Baudin (1754–1803). French naval captain who undertook trips to China and South America, but the travel plans that were to include Humboldt disintegrated because of conflicts with Baudin’s officers and an illness that eventually led to his death. Margot Faak, *Alexander von Humboldt. Reise durch Venezuela. Auswahl aus den amerikanischen Reisetagebüchern* (Berlin: Akademie-Verlag, 2000), p. 552.

3 Aimé Bonpland (Jaques-Alexandre Goujaud) (1773–1858). French naval physician and botanist who accompanied Humboldt on his travels in the Americas. His name appears in the title pages of Humboldt’s books as co-author. After his travels with Humboldt Bonpland returned to South America to live there until the end of his life. *Reise durch Venezuela*, pp. 553–554.


5 “I have several times seen the boa swimming in the Orinoco, and in the smaller forest streams, the Tuamini, the Temi, and the Atabapo. It holds its head above the water like a dog. Its skin is finely spotted. It is said to attain the length of 48 feet, but the largest skins which have as yet been brought to Europe and carefully measured do not exceed 23 feet. The South American boa (which is a python) differs from the

6 Charles-Marie de La Condamine (1701–1774). French scientist and explorer, who took part with Bouguer in the exploration of Ecuador and traveled on the Amazon to the Atlantic. He published a narrative of his travels and his findings. Reise durch Venezuela, p. 572.

7 “The forest, between Javita and the Canno Pimichin, affords an immense quantity of gigantic trees, occotes and real laurels (the third group of the laurineae, the persea, has been found wild only above thousand toises [6,396 feet] of height) . . . The most celebrated resin bears the name of mani; and of this we saw masses of several hundred weight, resembling colophony and mastic. The tree which is called mani by the Paraginis, and which Bonpland believes to be the moronoea coccinea, furnishes but a small quantity of the substance employed in the trade with Angostora.” Personal Narrative, vol. V, Chapter p. 255 and 257–258.

8 lecythis zabucajo. A very large tree bearing the sapucaia, also called sterculia or paradise nut.


10 Humboldt describes the Vibora rocks and the difficulties encountered. See his Personal Narrative, vol. Chapter 29, in considerable detail: “We were often forced to drive from our course; and, on account of the extreme smallness of our vessel, we were almost constantly under water. . . . In considering la Vibora not as submerged land, but as a heaved-up part of the surface of the globe which could not reach the level of the sea, we are struck to see this great submarine island display, like the neighboring island of Jamaica and Cuba, the loftiest heights toward the eastern boundary.” Personal Narrative, vol. 7, Chapter pp. 382–386.

11 Juan Gonzáles († 1801). Franciscan missionary who had accompanied Humboldt from Venezuela to Cuba, before the fatal ship disaster near the coast of Africa. Reise durch Venezuela, p. 567

The shrubs of *melastoma* often display dramatic flower colors. Humboldt sent samples of melastoma seeds to his Berlin friend Karl Ludwig Willdenow from Mexico in 1803. *Briefe aus Amerika*, p. 229.

Humboldt compares the *cinchona* (quinine, used to treat malaria), the bark of which was believed to have medical uses. See his letter to Antonio José Cavanilles in 1803. *Briefe aus Amerika*, pp. 226–227. In his *Aspects of Nature* Humboldt writes in detail about this tree: “It is the precious production of the tree which we have described botanically as *Cinchona condaminea*, but which, under erroneous impression that all the kinds of the Quina or fever bark of commerce were furnished by the same species of tree, had previously been called *Cinchona officinalis*. The Fever Bark was first brought to Europe towards the middle of the seventeenth century...” See pp. 413–414 and 439–440. See also Humboldt’s essay “Account of the Cinchona Forests of South America,’ in Aylmer Bourke Lambert (ed.), *An Illustration of the Genus Cinchona* (London: Longman et al., 1821), pp. 19–56. Humboldt was concerned about the survival of *cinchona*: “If the governments in America do not attend to the preservation of the quina, either by prohibiting the felling of the trees or by obliging the territorial magistrates to enforce the cutters to guard them from destruction, the highly esteemed product of the New World will be swept from the country.”


Humboldt was unaware of the height of Mt. Everest at this time.


The meaning of John Vaughan’s translation at this point is unclear: “. . . the extremity of the celebrated bases of the triangles of the Spanish and French academicians”. De Terra, *Studies*, p. 570.

The Spanish crown, informed of only one side of the dispute and fearing French claims in Ecuador, ordered the destruction of the pyramids in 1742. Humboldt, whom Montúfar consulted about the rebuilding, described the condition of the pyramids and indicated his proposals in his diary. *Reise auf dem Río Magdalena*, part 2, pp. 65–72 and 336–337.

Humboldt and Bonpland discovered “Corteza de Angostura” (Fieberrinde aus Angostura) in the Orinoco region. *Reise auf dem Río Magdalena*, part 2, p. 364.

See diary entry that describes this excursion that did not reach its goal. Ujibar is a village on the Río Caracol. *Reise auf dem Río Magdalena*, part 2, pp. 183-184.

“Arborescent ferns, when they reach a height of 40 feet, have something of a palm-like appearance; but their stems are less slender, shorter, and more rough and scaly than those of palms. . . In the tropics vegetation is generally a fresher verdure, more luxuriant and succulent, and adorned with larger and more shining leaves, than in our northern climates.” *Aspects of Nature*, pp. 244–245.