Alexander von Humboldt, Aimé Bonpland

Personal Narrative of Travels to the Equinoctial Regions of America

(Vol. 1-3)

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Expedition in Central & South America 1799-1804

Translator: Thomasina Ross

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Contact: info@e-artnow.org

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INTRODUCTION BY THE AUTHOR.

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Many years have elapsed since I quitted Europe, to explore the interior of the New Continent. Devoted from my earliest youth to the study of nature, feeling with enthusiasm the wild beauties of a country guarded by mountains and shaded by ancient forests, I experienced in my travels, enjoyments which have amply compensated for the privations inseparable from a laborious and often agitated life. These enjoyments, which I endeavoured to impart to my readers in my 'Remarks upon the Steppes,' and in the 'Essay on the Physiognomy of Plants,' were not the only fruits I reaped from an undertaking formed with the design of contributing to the progress of natural philosophy. I had long prepared myself for the observations which were the principal object of my journey to the torrid zone. I was provided with instruments of easy and convenient use, constructed by the ablest makers, and I enjoyed the special protection of a government which, far from presenting obstacles to my investigations, constantly honoured me with every mark of regard and confidence. I was aided by a courageous and enlightened friend, and it was singularly propitious to the success of our participated labour, that the zeal and equanimity of that friend never failed, amidst the fatigues and dangers to which we were sometimes exposed.

Under these favourable circumstances, traversing regions which for ages have remained almost unknown to most of the nations of Europe, I might add even to Spain, M.

Bonpland and myself collected a considerable number of materials, the publication of which may throw some light on the history of nations, and advance the study of nature.

I had in view a two-fold purpose in the travels of which I now publish the historical narrative. I wished to make known the countries I had visited; and to collect such facts as are fitted to elucidate a science of which we as yet possess scarcely the outline, and which has been vaguely denominated Natural History of the World, Theory of the Earth, or Physical Geography. The last of these two objects seemed to me the most important. I was passionately devoted to botany and certain parts of zoology, and I flattered myself that our investigations might add some new species to those already known, both in the animal and vegetable kingdoms; but preferring the connection of facts which have been long observed, to the knowledge of insulated facts, although new, the discovery of an unknown genus seemed to me far less interesting than an observation on the geographical relations of the vegetable world, on the migrations of the social plants, and the limit of the height which their different tribes attain on the flanks of the Cordilleras.

The natural sciences are connected by the same ties which link together all the phenomena of nature. The classification of the species, which must be considered as the fundamental part of botany, and the study of which is rendered attractive and easy by the introduction of natural methods, is to the geography of plants what descriptive mineralogy is to the indication of the rocks constituting the exterior crust of the globe. To comprehend the laws

observed in the position of these rocks, to determine the age of their successive formations, and their identity in the most distant regions, the geologist should be previously acquainted with the simple fossils which compose the mass of mountains, and of which the names and character are the object of oryctognostical knowledge. It is the same with that part of the natural history of the globe which treats of the relations plants have to each other, to the soil whence they spring, or to the air which they inhale and modify. The progress of the geography of plants depends in a great measure on that of descriptive botany; and it would be injurious to the advancement of science, to attempt rising to general ideas, whilst neglecting the knowledge of particular facts.

I have been guided by these considerations in the course of my inquiries; they were always present to my mind during the period of my preparatory studies. When I began to read the numerous narratives of travels, which compose so interesting a part of modern literature, I regretted that travellers, the most enlightened in the insulated branches of natural history, were seldom possessed of sufficient variety of knowledge to avail themselves of every advantage arising from their position. It appeared to me, that the importance of the results hitherto obtained did not keep pace with the immense progress which, at the end of the eighteenth century, had been made in several departments of science, particularly geology, the history of the modifications of the atmosphere, and the physiology of animals and plants. I saw with regret, (and all scientific men have shared this feeling) that whilst the number of accurate

instruments was daily increasing, we were still ignorant of the height of many mountains and elevated plains; of the periodical oscillations of the aerial ocean; of the limit of perpetual snow within the polar circle and on the borders of the torrid zone; of the variable intensity of the magnetic forces, and of many other phenomena equally important.

Maritime expeditions and circumnavigatory voyages have conferred just celebrity on the names of the naturalists and astronomers who have been appointed by various governments to share the dangers of those undertakings; but though these eminent men have given us precise notions of the external configuration of countries, of the natural history of the ocean, and of the productions of islands and coasts, it must be admitted that maritime expeditions are less fitted to advance the progress of geology and other parts of physical science, than travels into the interior of a continent. The advancement of the natural sciences has been subordinate to that of geography and nautical astronomy. During a voyage of several years, the land but seldom presents itself to the observation of the mariner, and when, after lengthened expectation, it is descried, he often finds it stripped of its most beautiful productions. Sometimes, beyond a barren coast, he perceives a ridge of mountains covered with verdure, but its distance forbids examination, and the view serves only to excite regret.

Journeys by land are attended with considerable difficulties in the conveyance of instruments and collections, but these difficulties are compensated by advantages which it is unnecessary to enumerate. It is not by sailing along a

coast that we can discover the direction of chains of mountains, and their geological constitution, the climate of each zone, and its influence on the forms and habits of organized beings. In proportion to the extent of continents, the greater on the surface of the soil are the riches of animal and vegetable productions; the more distant the central chain of mountains from the sea-shore, the greater is the variety in the bosom of the earth, of those stony strata, the regular succession of which unfolds the history of our planet. As every being considered apart is impressed with a particular type, so, in like manner, we find the same distinctive impression in the arrangement of brute matter organized in rocks, and also in the distribution and mutual relations of plants and animals. The great problem of the physical description of the globe, is the determination of the form of these types, the laws of their relations with each other, and the eternal ties which link the phenomena of life, and those of inanimate nature.

Having stated the general object I had in view in my expeditions, I will now hasten to give a slight sketch of the whole of the collections and observations which we have accumulated, and the union of which is the aim and end of every scientific journey. The maritime war, during our abode in America, having rendered communication with Europe very uncertain, we found ourselves compelled, in order to diminish the chance of losses, to form three different collections. Of these, the first was embarked for Spain and France, the second for the United States and England, and the third, which was the most considerable, remained almost constantly under our own eyes. Towards the close of

our expedition, this last collection formed forty-two boxes, containing an herbal of six thousand equinoctial plants, seeds, shells, insects, and (what had hitherto never been brought to Europe) geological specimens, from the Chimborazo, New Grenada, and the banks of the river Amazon.

After our journey to the Orinoco, we left a part of these collections at the island of Cuba, intending to take them on our return from Peru to Mexico. The rest followed us during the space of five years, on the chain of the Andes, across New Spain, from the shores of the Pacific to the coasts of the Caribbean Sea. The conveyance of these objects, and the minute care they required, occasioned embarrassments scarcely conceiveable even by those who have traversed the most uncultivated parts of Europe. Our progress was often retarded by the necessity of dragging after us, during expeditions of five or six months, twelve, fifteen, and sometimes more than twenty loaded mules, exchanging these animals every eight or ten days, and superintending the Indians who were employed in driving the numerous caravan. Often, in order to add to our collections of new mineral substances, we found ourselves obliged to throw away others, which we had collected a considerable time before. These sacrifices were not less vexatious than the losses we accidentally sustained. Sad experience taught us but too late, that from the sultry humidity of the climate, and the frequent falls of the beasts of burden, we could preserve neither the skins of animals hastily prepared, nor the fishes and reptiles placed in phials filled with alcohol. I enter into these details, because, though little interesting in

themselves, they serve to show that we had no means of bringing back, in their natural state, many objects of zoology and comparative anatomy, of which we have published descriptions and drawings. Notwithstanding some obstacles, and the expense occasioned by the carriage of these articles, I had reason to applaud the resolution I had taken before my departure, of sending to Europe the duplicates only of the productions we collected. I cannot too often repeat, that when the seas are infested with privateers, a traveller can be sure only of the objects in his own possession. A very few of the duplicates, which we shipped for Europe during our abode in America, were saved; the greater part fell into the hands of persons who feel no interest for science. When a ship is condemned in a foreign port, boxes containing only dried plants or stones, instead of being sent to the scientific men to whom they are addressed, are put aside and forgotten. Some of our geological collections taken in the Pacific were, however, more fortunate. We were indebted for their preservation to the generous activity of Sir Joseph Banks, President of the Royal Society of London, who, amidst the political agitations of Europe, unceasingly laboured to strengthen the bonds of union between scientific men of all nations.

In our investigations we have considered each phenomenon under different aspects, and classed our remarks according to the relations they bear to each other. To afford an idea of the method we have followed, I will here add a succinct enumeration of the materials with which we were furnished for describing the volcanoes of Antisana and Pichincha, as well as that of Jorullo: the latter, during the

night of the 20th of September, 1759, rose from the earth one thousand five hundred and seventy-eight French feet above the surrounding plains of Mexico. The position of these singular mountains in longitude and latitude was ascertained by astronomical observations. We took the heights of the different parts by the aid of the barometer, and determined the dip of the needle and the intensity of the magnetic forces. Our collections contain the plants which are spread over the flanks of these volcanoes, and specimens of different rocks which, superposed one upon another, constitute their external coat. We are enabled to indicate, by measures sufficiently exact, the height above the level of the ocean, at which we found each group of plants, and each volcanic rock. Our journals furnish us with a series of observations on the humidity, the temperature, the electricity, and the degree of transparency of the air on the brinks of the craters of Pichincha and Jorullo; they also contain topographical plans and geological profiles of these mountains, founded in part on the measure of vertical bases, and on angles of altitude. Each observation has been calculated according to the tables and the methods which are considered most exact in the present state of our knowledge; and in order to judge of the degree of confidence which the results may claim, we have preserved the whole detail of our partial operations.

It would have been possible to blend these different materials in a work devoted wholly to the description of the volcanoes of Peru and New Spain. Had I given the physical description of a single province, I could have treated separately everything relating to its geography, mineralogy,

and botany; but how could I interrupt the narrative of a journey, a disquisition on the manners of a people, or the great phenomena of nature, by an enumeration of the productions of the country, the description of new species of animals and plants, or the detail of astronomical observations. Had I adopted a mode of composition which would have included in one and the same chapter all that has been observed on one particular point of the globe, I should have prepared a work of cumbrous length, and devoid of that clearness which arises in a great measure from the methodical distribution of matter. Notwithstanding the efforts I have made to avoid, in this narrative, the errors I had to dread, I feel conscious that I have not always succeeded in separating the observations of detail from those general results which interest every enlightened mind. These results comprise in one view the climate and its influence on organized beings, the aspect of the country, varied according to the nature of the soil and its vegetable covering, the direction of the mountains and rivers which separate races of men as well as tribes of plants; and finally, the modifications observable in the condition of people living in different latitudes, and in circumstances more or less favourable to the development of their faculties. I do not fear having too much enlarged on objects so worthy of attention: one of the noblest characteristics which distinguish modern civilization from that of remoter times is, that it has enlarged the mass of our conceptions, rendered us more capable of perceiving the connection between the physical and intellectual world, and thrown a more general interest over objects which heretofore occupied only a few

scientific men, because those objects were contemplated separately, and from a narrower point of view.

As it is probable that these volumes will obtain the attention of a greater number of readers than the detail of my observations merely scientific, or my researches on the population, the commerce, and the mines of New Spain, I may be permitted here to enumerate all the works which I have hitherto published conjointly with M. Bonpland. When several works are interwoven in some sort with each other, it may perhaps be interesting to the reader to know the sources whence he may obtain more circumstantial information.

1.I.1. ASTRONOMICAL OBSERVATIONS, TRIGONOMETRICAL OPERATIONS, AND BAROMETRICAL MEASUREMENTS MADE DURING THE COURSE OF A JOURNEY TO THE EQUINOCTIAL REGIONS OF THE NEW CONTINENT, FROM 1799 TO 1804.

This work, to which are added historical researches on the position of several points important to navigators, contains, first, the original observations which I made from the twelfth degree of southern to the forty-first degree of northern latitude; the transits of the sun and stars over the meridian; distances of the moon from the sun and the stars; occultations of the satellites; eclipses of the sun and moon; transits of Mercury over the disc of the sun; azimuths; circum-meridian altitudes of the moon, to determine the longitude by the differences of declination; researches on the relative intensity of the light of the austral stars;

geodesical measures, etc. Secondly, a treatise on the astronomical refractions in the torrid zone, considered as the effect of the decrement of caloric in the strata of the air; thirdly, the barometric measurement of the Cordillera of the Andes, of Mexico, of the province of Venezuela, of the kingdom of Quito, and of New Grenada; followed by geological observations, and containing the indication of four hundred and fifty-three heights, calculated according to the method of M. Laplace, and the new co-efficient of M. Ramond; fourthly, a table of near seven hundred geographical positions on the New Continent; two hundred and thirty-five of which have been determined by my own observations, according to the three co-ordinates of longitude, latitude, and height.

1.I.2. EQUINOCTIAL PLANTS COLLECTED IN MEXICO, IN THE ISLAND OF CUBA, IN THE PROVINCES OF CARACAS, CUMANA, AND BARCELONA, ON THE ANDES OF NEW GRENADA, QUITO, AND PERU, AND ON THE BANKS OF THE RIO NEGRO, THE ORINOCO, AND THE RIVER AMAZON.

M. Bonpland has in this work given figures of more than forty new genera of plants of the torrid zone, classed according to their natural families. The methodical descriptions of the species are both in French and Latin, and are accompanied by observations on the medicinal properties of the plants, their use in the arts, and the climate of the countries in which they are found.

1.I.3. MONOGRAPHY OF THE MELASTOMA, RHEXIA, AND OTHER GENERA OF THIS ORDER OF PLANTS.

Comprising upwards of a hundred and fifty species of melastomaceae, which we collected during the course of our expeditions, and which form one of the most beautiful ornaments of tropical vegetation. M. Bonpland has added the plants of the same family, which, among many other rich stores of natural history, M. Richard collected in his interesting expedition to the Antilles and French Guiana, and the descriptions of which he has communicated to us.

1.I.4. ESSAY ON THE GEOGRAPHY OF PLANTS, ACCOMPANIED BY A PHYSICAL TABLE OF THE EQUINOCTIAL REGIONS, FOUNDED ON MEASURES TAKEN FROM THE TENTH DEGREE OF NORTHERN TO THE TENTH DEGREE OF SOUTHERN LATITUDE.

I have endeavoured to collect in one point of view the whole of the physical phenomena of that part of the New Continent comprised within the limits of the torrid zone from the level of the Pacific to the highest summit of the Andes; namely, the vegetation, the animals, the geological relations, the cultivation of the soil, the temperature of the air, the limit of perpetual snow, the chemical constitution of the atmosphere, its electrical intensity, its barometrical pressure, the decrement of gravitation, the intensity of the azure colour of the sky, the diminution of light during its passage through the successive strata of the air, the horizontal refractions, and the heat of boiling water at different heights. Fourteen scales, disposed side by side

with a profile of the Andes, indicate the modifications to which these phenomena are subject from the influence of the elevation of the soil above the level of the sea. Each group of plants is placed at the height which nature has assigned to it, and we may follow the prodigious variety of their forms from the region of the palms and arborescent ferns to those of the johannesia (chuquiraga, Juss.), the gramineous plants, and lichens. These regions form the natural divisions of the vegetable empire; and as perpetual snow is found in each climate at a determinate height, so, in like manner, the febrifuge species of the quinquina (cinchona) have their fixed limits, which I have marked in the botanical chart belonging to this essay.

1.I.5. OBSERVATIONS ON ZOOLOGY AND COMPARATIVE ANATOMY.

I have comprised in this work the history of the condor; experiments on the electrical action of the gymnotus; a treatise on the larynx of the crocodiles, the quadrumani, and birds of the tropics; the description of several new species of reptiles, fishes, birds, monkeys, and other mammalia but little known. M. Cuvier has enriched this work with a very comprehensive treatise on the axolotl of the lake of Mexico, and on the genera of the Protei. That naturalist has also recognized two new species of mastodons and an elephant among the fossil bones of quadrupeds which we brought from North and South America. For the description of the insects collected by M. Bonpland we are indebted to M. Latreille, whose labours have so much contributed to the progress of entomology in our times. The second volume of

this work contains figures of the Mexican, Peruvian, and Aturian skulls, which we have deposited in the Museum of Natural History at Paris, and respecting which Blumenbach has published observations in the 'Decas quinta Craniorum diversarum gentium.'

1.I.6. POLITICAL ESSAY ON THE KINGDOM OF NEW SPAIN, WITH A PHYSICAL AND GEOGRAPHICAL ATLAS, FOUNDED ON ASTRONOMICAL OBSERVATIONS AND TRIGONOMETRICAL AND BAROMETRICAL MEASUREMENTS.

This work, based on numerous official memoirs, presents, in six divisions, considerations on the extent and natural appearance of Mexico, on the population, on the manners of the inhabitants, their ancient civilization, and the political division of their territory. It embraces also the agriculture, the mineral riches, the manufactures, the commerce, the finances, and the military defence of that vast country. In treating these different subjects I have endeavoured to consider them under a general point of view; I have drawn a parallel not only between New Spain, the other Spanish colonies, and the United States of North America, but also between New Spain and the possessions of the English in Asia; I have compared the agriculture of the countries situated in the torrid zone with that of the temperate climates; and I have examined the quantity of colonial produce necessary to Europe in the present state of civilization. In tracing the geological description of the richest mining districts in Mexico, I have, in short, given a statement of the mineral produce, the population, the

imports and exports of the whole of Spanish America. I have examined several questions which, for want of precise data, had not hitherto been treated with the attention they demand, such as the influx and reflux of metals, their progressive accumulation in Europe and Asia, and the quantity of gold and silver which, since the discovery of America down to our own times, the Old World has received from the New. The geographical introduction at the beginning of this work contains the analysis of the materials which have been employed in the construction of the Mexican Atlas.

1.I.7. VIEWS OF THE CORDILLERAS, AND MONUMENTS OF THE INDIGENOUS NATIONS OF THE NEW CONTINENT.* (*Atlas Pittoresque, ou Vues des Cordilleres, 1 volume folio, with 69 plates, part of which are coloured, accompanied by explanatory treatises. This work may be considered as the Atlas to the historical narrative of the travels.)

This work is intended to represent a few of the grand scenes which nature presents in the lofty chain of the Andes, and at the same time to throw some light on the ancient civilization of the Americans, through the study of their monuments of architecture, their hieroglyphics, their religious rites, and their astrological reveries. I have given in this work a description of the teocalli, or Mexican pyramids, and have compared their structure with that of the temple of Belus. I have described the arabesques which cover the ruins of Mitla, the idols in basalt ornamented with the calantica of the heads of Isis; and also a considerable number of symbolical paintings, representing the serpent-woman (the Mexican Eve), the deluge of Coxcox, and the

first migrations of the natives of the Aztec race. I have endeavoured to prove the striking analogies existing between the calendar of the Toltecs and the catasterisms of their zodiac, and the division of time of the people of Tartary and Thibet, as well as the Mexican traditions on the four regenerations of the globe, the pralayas of the Hindoos, and the four ages of Hesiod. In this work I have also included (in addition to the hieroglyphical paintings I brought to Europe), fragments of all the Aztec manuscripts, collected in Rome, Veletri, Vienna, and Dresden, and one of which reminds us, by its lineary symbols, of the kouas of the Chinese. Together with the rude monuments of the aborigines of America, this volume contains picturesque views of the mountainous countries which those people inhabited; for example, the cataract of Tequendama, Chimborazo, the volcano of Jorullo and Cayambe, the pyramidal summit of which, covered with eternal ice, is situated directly under the equinoctial line. In every zone the configuration of the ground, the physiognomy of the plants, and the aspect of lovely or wild scenery, have great influence on the progress of the arts, and on the style which distinguishes their productions. This influence is so much the more perceptible in proportion as man is farther removed from civilization.

I could have added to this work researches on the character of languages, which are the most durable monuments of nations. I have collected a number of materials on the languages of America, of which MM. Frederic Schlegel and Vater have made use; the former in his Considerations on the Hindoos, the latter in his Continuation of the Mithridates of Adelung, in the

Ethnographical Magazine, and in his Inquiries into the Population of the New Continent. These materials are now in the hands of my brother, William von Humboldt, who, during his travels in Spain, and a long abode at Rome, formed the richest collection of American vocabularies in existence. His extensive knowledge of the ancient and modern languages has enabled him to trace some curious analogies in relation to this subject, so important to the philosophical study of the history of man. A part of his labours will find a place in this narrative.

Of the different works which I have here enumerated, the second and third were composed by M. Bonpland, from the observations which he made in a botanical journal. This journal contains more than four thousand methodical descriptions of equinoctial plants, a ninth part only of which have been made by me. They appear in a separate publication, under the title of Nova Genera et Species Plantariem. In this work will be found, not only the new species we collected, which, after a careful examination by one of the first botanists of the age, Professor Willdenouw, are computed to amount to fourteen or fifteen hundred, but also the interesting observations made by M. Bonpland on plants hitherto imperfectly described. The plates of this work are all engraved according to the method followed by M. Labillardiere, in the Specimen Planterum Novae Hollandiae, a work remarkable for profound research and clearness of arrangement.

After having distributed into separate works all that belongs to astronomy, botany, zoology, the political description of New Spain, and the history of the ancient

civilization of certain nations of the New Continent, there still remained many general results and local descriptions, which I might have collected into separate treatises. I had, during my journey, prepared papers on the races of men in South America; on the Missions of the Orinoco; on the obstacles to the progress of society in the torrid zone arising from the climate and the strength of vegetation; on the character of the landscape in the Cordilleras of the Andes compared with that of the Alps in Switzerland; on the analogies between the rocks of the two hemispheres; on the physical constitution of the air in the equinoctial regions, etc. I had left Europe with the firm intention of not writing what is usually called the historical narrative of a journey, but to publish the fruit of my inquiries in works merely descriptive; and I had arranged the facts, not in the order in which they successively presented themselves, but according to the relation they bore to each other. Amidst the overwhelming majesty of Nature, and the stupendous objects she presents at every step, the traveller is little disposed to record in his journal matters which relate only to himself, and the ordinary details of life.

I composed a very brief itinerary during the course of my excursions on the rivers of South America, and in my long journeys by land. I regularly described (and almost always on the spot) the visits I made to the summits of volcanoes, or mountains remarkable for their height; but the entries in my journal were interrupted whenever I resided in a town, or when other occupations prevented me from continuing a work which I considered as having only a secondary interest. Whenever I wrote in my journal, I had no other

motive than the preservation of some of those fugitive ideas which present themselves to a naturalist, whose life is almost wholly passed in the open air. I wished to make a temporary collection of such facts as I had not then leisure to class, and note down the first impressions, whether agreeable or painful, which I received from nature or from man. Far from thinking at the time that those pages thus hurriedly written would form the basis of an extensive work to be offered to the public, it appeared to me, that my journal, though it might furnish certain data useful to science, would present very few of those incidents, the recital of which constitutes the principal charm of an itinerary.

The difficulties I have experienced since my return, in the composition of a considerable number of treatises, for the purpose of making known certain classes of phenomena, insensibly overcame my repugnance to write the narrative of my journey. In undertaking this task, I have been guided by the advice of many estimable persons, who honour me with their friendship. I also perceived that such a preference is given to this sort of composition, that scientific men, after having presented in an isolated form the account of their researches on the productions, the manners, and the political state of the countries through which they have passed, imagine that they have not fulfilled their engagements with the public, till they have written their itinerary.

An historical narrative embraces two very distinct objects; the greater or the less important events connected with the purpose of the traveller, and the observations he

has made during his journey. The unity of composition also, which distinguishes good works from those on an ill-constructed plan, can be strictly observed only when the traveller describes what has passed under his own eye; and when his principal attention has been fixed less on scientific observations than on the manners of different people and the great phenomena of nature. Now, the most faithful picture of manners is that which best displays the relations of men towards each other. The character of savage or civilized life is portrayed either in the obstacles a traveller meets with, or in the sensations he feels. It is the traveller himself whom we continually desire to see in contact with the objects which surround him; and his narration interests us the more, when a local tint is diffused over the description of a country and its inhabitants. Such is the source of the interest excited by the history of those early navigators, who, impelled by intrepidity rather than by science, struggled against the elements in their search for the discovery of a new world. Such is the irresistible charm attached to the fate of that enterprising traveller (Mungo Park.), who, full of enthusiasm and energy, penetrated alone into the centre of Africa, to discover amidst barbarous nations the traces of ancient civilization.

In proportion as travels have been undertaken by persons whose views have been directed to researches into descriptive natural history, geography, or political economy, itineraries have partly lost that unity of composition, and that simplicity which characterized those of former ages. It is now become scarcely possible to connect so many different materials with the detail of other events; and that

part of a traveller's narrative which we may call dramatic gives way to dissertations merely descriptive. The numerous class of readers who prefer agreeable amusement to solid instruction, have not gained by the exchange; and I am afraid that the temptation will not be great to follow the course of travellers who are incumbered with scientific instruments and collections.

To give greater variety to my work, I have often interrupted the historical narrative by descriptions. I first represent phenomena in the order in which they appeared; and I afterwards consider them in the whole of their individual relations. This mode has been successfully followed in the journey of M. de Saussure, whose most valuable work has contributed more than any other to the advancement of science. Often, amidst dry discussions on meteorology, it contains many charming descriptions; such as those of the modes of life of the inhabitants of the mountains, the dangers of hunting the chamois, and the sensations felt on the summit of the higher Alps.

There are details of ordinary life which it may be useful to note in an itinerary, because they serve for the guidance of those who afterwards journey through the same countries. I have preserved a few, but have suppressed the greater part of those personal incidents which present no particular interest, and which can be rendered amusing only by the perfection of style.

With respect to the country which has been the object of my investigations, I am fully sensible of the great advantages enjoyed by persons who travel in Greece, Egypt, the banks of the Euphrates, and the islands of the Pacific, in

comparison with those who traverse the continent of America. In the Old World, nations and the distinctions of their civilization form the principal points in the picture; in the New World, man and his productions almost disappear amidst the stupendous display of wild and gigantic nature. The human race in the New World presents only a few remnants of indigenous hordes, slightly advanced in civilization; or it exhibits merely the uniformity of manners and institutions transplanted by European colonists to foreign shores. Information which relates to the history of our species, to the various forms of government, to monuments of art, to places full of great remembrances, affect us far more than descriptions of those vast solitudes which seem destined only for the development of vegetable life, and to be the domain of wild animals. The savages of America, who have been the objects of so many systematic reveries, and on whom M. Volney has lately published some accurate and intelligent observations, inspire less interest since celebrated navigators have made known to us the inhabitants of the South Sea islands, in whose character we find a striking mixture of perversity and meekness. The state of half-civilization existing among those islanders gives a peculiar charm to the description of their manners. A king, followed by a numerous suite, presents the fruits of his orchard; or a funeral is performed amidst the shade of the lofty forest. Such pictures, no doubt, have more attraction than those which pourtray the solemn gravity of the inhabitant of the banks of the Missouri or the Maranon.

America offers an ample field for the labours of the naturalist. On no other part of the globe is he called upon

more powerfully by nature to raise himself to general ideas on the cause of phenomena and their mutual connection. To say nothing of that luxuriance of vegetation, that eternal spring of organic life, those climates varying by stages as we climb the flanks of the Cordilleras, and those majestic rivers which a celebrated writer (M. Chateaubriand.) has described with such graceful accuracy, the resources which the New World affords for the study of geology and natural philosophy in general have been long since acknowledged. Happy the traveller who may cherish the hope that he has availed himself of the advantages of his position, and that he has added some new facts to the mass of those previously acquired!

Since I left America, one of those great revolutions, which at certain periods agitate the human race, has broken out in the Spanish colonies, and seems to prepare new destinies for a population of fourteen millions of inhabitants, spreading from the southern to the northern hemisphere, from the shores of the Rio de la Plata and Chile to the remotest part of Mexico. Deep resentments, excited by colonial legislation, and fostered by mistrustful policy, have stained with blood regions which had enjoyed, for the space of nearly three centuries, what I will not call happiness but uninterrupted peace. At Quito several of the most virtuous and enlightened citizens have perished, victims of devotion to their country. While I am giving the description of regions, the remembrance of which is so dear to me, I continually light on places which recall to my mind the loss of a friend.

When we reflect on the great political agitations of the New World, we observe that the Spanish Americans are by

no means in so favourable a position as the inhabitants of the United States; the latter having been prepared for independence by the long enjoyment of constitutional liberty. Internal dissensions are chiefly to be dreaded in regions where civilization is but slightly rooted, and where, from the influence of climate, forests may soon regain their empire over cleared lands if their culture be abandoned. It may also be feared that, during a long series of years, no foreign traveller will be enabled to traverse all the countries which I have visited. This circumstance may perhaps add to the interest of a work which pourtrays the state of the greater part of the Spanish colonies at the beginning of the 19th century. I even venture to indulge the hope that this work will be thought worthy of attention when passions shall be hushed into peace, and when, under the influence of a new social order, those countries shall have made rapid progress in public welfare. If then some pages of my book are snatched from oblivion, the inhabitant of the banks of the Orinoco and the Atabapo will behold with delight populous cities enriched by commerce, and fertile fields cultivated by the hands of free men, on those very spots where, at the time of my travels, I found only impenetrable forests and inundated lands.

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CHAPTER 1.1. PREPARATIONS. INSTRUMENTS. DEPARTURE FROM SPAIN. LANDING AT THE CANARY ISLANDS.

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From my earliest youth I felt an ardent desire to travel into distant regions, seldom visited by Europeans. This desire is characteristic of a period of our existence when appears an unlimited horizon, and when we find an irresistible attraction in the impetuous agitations of the mind, and the image of positive danger. Though educated in a country which has no direct communication with either the East or the West Indies, living amidst mountains remote from coasts, and celebrated for their numerous mines, I felt an increasing passion for the sea and distant expeditions. Objects with which we are acquainted only by the animated narratives of travellers have a peculiar charm; imagination wanders with delight over that which is vague and undefined; and the pleasures we are deprived of seem to possess a fascinating power, compared with which all we daily feel in the narrow circle of sedentary life appears insipid. The taste for herborisation, the study of geology, rapid excursions to Holland, England, and France, with the celebrated Mr. George Forster, who had the happiness to accompany captain Cook in his second expedition round the globe, contributed to give a determined direction to the plan of travels which I had formed at eighteen years of age. No longer deluded by the agitation of a wandering life, I was