

Humboldt's life and character : an address before the Linnaean Association of Pennsylvania College, delivered at the annual commencement, September 14, 1859 / by Alfred Stillé.

Contributors

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Stille (A.)
Humboldt's Life and Character;

AN ADDRESS

BEFORE THE

LINNÆAN ASSOCIATION

OF

PENNSYLVANIA COLLEGE,

DELIVERED AT THE ANNUAL COMMENCEMENT,

September 14, 1859,

BY

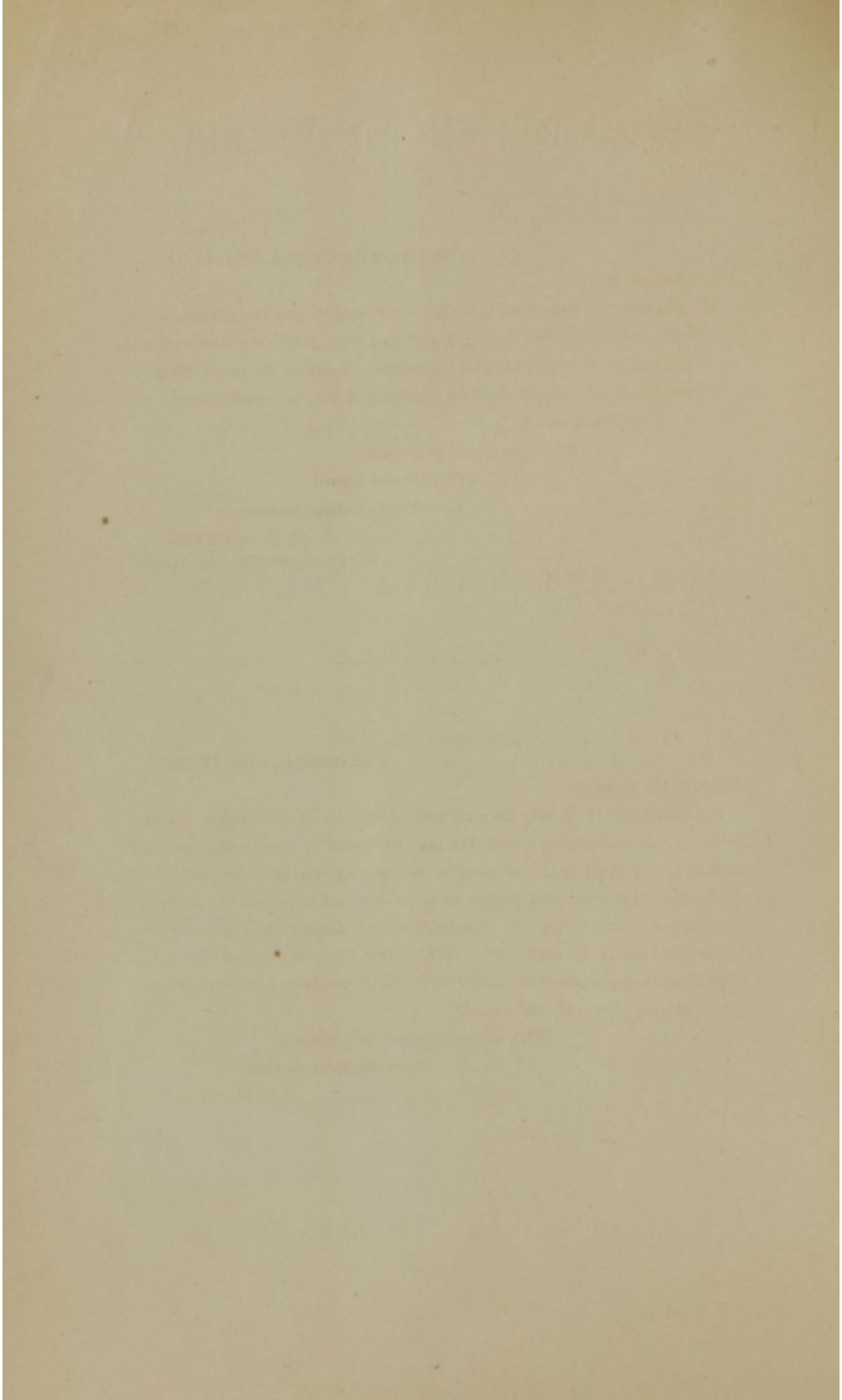
ALFRED STILLÉ, M.D.

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1859.



PENNSYLVANIA COLLEGE, Sept. 15, 1859.

PROF. STILLÉ, M. D.

MY DEAR SIR: I have been directed to express to you the thanks of the Linnæan Association for the kind services you yesterday rendered, and to solicit a copy of your able and instructive discourse for publication.

Allow me to add that I shall be gratified, if you will comply with the wishes of the Association.

I have the honor to remain,

With sincere regard,

Your obedient servant,

M. L. STOEVER,
President of the Association.

PHILADELPHIA, Sept. 17, 1859.

PROF. M. L. STOEVER.

MY DEAR SIR: It is only because my Address is, in some sense, the property of the Association which did me the honor of appointing me their Orator, that I yield to the request so courteously conveyed by you. The materials at my command proved to be too few and imperfect to enable me to compose such a picture of Humboldt as his singular merits deserved; but when I made the discovery it was too late to select another theme.

With this explanation to extenuate its short-comings, I place my manuscript at your disposal, and remain,

With sincere respect and esteem,

Your obedient servant,

ALFRED STILLÉ.

HUMBOLDT'S LIFE AND CHARACTER.*

THE anniversaries of great men and of the institutions they created, or which were founded in their honor, are fitly celebrated by a commemoration of their genius and of their services to science. It is a part of the homage which is their due. They enjoyed it by anticipation while unfolding and interpreting the book of Nature, and revealing to attentive throngs the wonders of the universe. Through the dim glass of mortal vision they caught imperfect outlines of the creation; on the wings of thought they soared far beyond the limits of actual observation, and, at last, throwing aside the mantle of the flesh, they sped where neither telescope nor reason had penetrated, to read the mysteries of the universe in the light of heaven. Could we but recall them from their celestial home, could they but lift for us the curtain which divides us from the upper world, what a flood of light would be poured upon the chaos of human knowledge—how vast a field would it reveal

* It is proper to acknowledge as the principal authority for the statements made in this Address—"Hermann Klencke's *Humboldt's Leben*, 3tte Aufl., Leipzig, 1859."

of scarce suspected truth! How poor would all the methods seem by means of which we now grope our way over the rough field of observation, and through the dark places of speculative inquiry—how insignificant the results which Science boasts of as the fruit of her thousand years of toil—how groundless many of the doctrines which she maintains and defends as articles of faith!

Even in their lifetime were those philosophers giants among a race of pigmies. Suns of light amid a twilight of ignorance, their beneficent rays warmed into life and vigor whole generations of scientific men, revealed the wondrous unity of creation, and vindicated the wisdom and the constancy of Nature's laws. If they did not scale the very summit of Olympus, they none the less climbed far beyond the footprints which their predecessors had left, and, from this still eminence, listened to the harmony of the universe, and repeated its music to a listening world.

Of this princely race of philosophers the first and most illustrious was Aristotle. For two thousand years the world has done homage to the splendor of his genius, the profundity of his research, and the all-embracing compass of his knowledge. In certain forms of thought, and in particular fields of observation, not a few of his successors have excelled him, but in clearness of mental vision, in variety of acquisition, and in comprehensiveness of intellectual grasp, one only has approached the Stagyrte, or left a name

so world-renowned as his. It echoes from the peak of Teneriffe, from the sky-piercing summits of Chimborazo and Cotopaxi, and the gigantic ranges of the Altay and Himalayas. Wherever Science, from her mountain throne, contemplates the vast monuments on which Time has recorded the history of the world, or, unfolding the bosom of the Earth, reveals the record of the successive phases of its development; wherever the tides of ocean and of air, the rush of mighty rivers, the stillness of unbounded plains, proclaim the laws which make this globe a habitable world—wherever forests wave, decked with exuberant foliage, laden with many-hued and fragrant flowers, and fruits of luscious taste, and teeming with throngs of beasts and birds, and insects—throughout the whole of Nature's richest kingdoms the name of HUMBOLDT stands confessed as the greatest of Nature's historians, the wisest and most eloquent expounder of her laws.

Did I but possess the knowledge which a comprehension of his works implies, could I but borrow from him the colors in which he painted scenes before unportrayed, I might leave you with fit food for thought and with stirring memories of this passing hour. But possessing no such knowledge, and no such skill, I can only beg you to accept what it is in my power to offer you, as an humble but fervent tribute to the memory of a great and good man.

It would carry me too far from my immediate theme to review the epoch in which Humboldt first

saw the light, and to study the causes which rendered it so fruitful in an illustrious progeny. Suffice it to remark that intellectual fruits, like those of the field, are never continuously great. It is no less a law of the mind than it is of the earth that the most abundant harvests spring from fallow ground.

From the time of Pliny until the 18th century the natural sciences had been placed under a ban. Faith in religious dogmas stifled every inquiry into the laws of life and matter, and the pomp and glitter of religious ceremonies blinded the sight to the glories of the universe. The temple of Nature was denounced as no less godless than the shrines of Greece, and "to look from nature up to nature's God" was regarded as impious idolatry, and an audacious encroachment on the rights of the church. I need not tell you how in escaping from this tyranny a large portion of Christendom rushed into the gulf of infidelity, and seemed almost to justify the doctrine that ignorance is the mother of faith. But the religious, political, and social revolutions of the 18th century broke up the weed-encumbered soil, and admitted the genial rays of liberty to the dormant seeds of thought and knowledge. With the first portentous shudderings and murmurings of society, two great interpreters of Nature arose; the one disciplined by the rude peasant life of Sweden, the other nurtured in the polite learning and the elegant accomplishments of France.

In the same year (1707) Linnæus and Buffon were born, and, more than all who preceded them, laid the

foundations of the natural sciences by a detailed description and classification of animals and plants, and by furnishing the earliest notions of the constitution of our globe which were derived from an actual survey of its physical condition and changes. It matters not that the one did little more than classify and confer titles upon the hitherto nameless vegetable tribes, and that the other drew a picture of animated nature in which the form as well as the coloring was often the work of genius and fancy rather than a transcript of reality. But what more could have been expected of the natural sciences than that in their infancy they should receive names, and before their maturity should indulge in speculations and unfounded conclusions which befit an age inspired by enthusiasm rather than one guided by the lessons of experience?

But the impulse to scientific investigation had been given; all Christendom was eager to read the volume which had been always lying open before the eyes of men, but which hitherto they had refused to see, or which had purposely been veiled from their sight. While licentiousness was corrupting the court, wisdom was inspiring the hearts of the people. Real and solid knowledge, knowledge of things, of causes, and effects, and modes of action, had thrust aside the elegant frippery of an emasculated literature, and the insolence that thought to answer a scientific question with a witticism. Verily nations were now "dancing upon a volcano" whose mutterings had been scoffed at or passed unheeded, but which, at last, with a ter-

rific convulsion, engulfed at once and forever the false and cankered society which was too frivolous to reflect, too vain to be instructed, and too vicious to find any pleasing savor in those sublime contemplations and those profound researches which teach man how small and how ignorant he is in the presence of Him "who hath measured the waters in the hollow of his hand, and meted out the heaven with a span, and comprehended the dust of the earth in a measure, and weighed the mountains in scales, and the hills in a balance."*

At such a period Alexander von Humboldt came upon the stage of active life. He was born at Berlin in 1769, a memorable year in the annals of genius, for in it were also born the eminent English orators and statesmen, Canning, Mackintosh, and Brougham; Sir Walter Scott, "the Wizard of the North;" Cuvier, the first naturalist of his age; Chateaubriand, the sentimental philosopher and historian; and Napoleon the Great. This was the epoch of a new spring-tide in the affairs of men, for after a long winter of death-like torpor, Christendom then became suddenly radiant with the light of genius and vocal with the song of liberty. On the western shores of the Atlantic a new nation sprang to life with Washington to guard and Franklin to enlighten it, and to teach the old world how freedom may be harmonized with law, knowledge with faith, and might with right. Beyond

* Isaiah xl. 12.

the seas doctrines of equality and liberty had been disseminated until all France and Germany became imbued with them, yet without suspecting their utter incompatibility with the existing condition of political or social affairs. The religious fervor which filled the hearts of *our* forefathers and sanctified *their* cause, insured not only its immediate but also its permanent success; but in Europe religion not only stood aloof from the struggle for liberty of action and thought and conscience, but condemned it as heretical and impious. The high priests of the new-born doctrine were Rousseau and Voltaire, a sensualist and a cynic, who, while they showed man his capacities, powers, and rights, forgot to instruct him in his duties.

Fortunately, and in spite of royal patronage, this doctrine did not corrupt the honest and earnest mind of Germany, which seized with avidity all that it contained adapted to enlighten and elevate the mind or to refine the feelings, but rejected its demoralizing principles with disgust.

Such was the condition of society when Humboldt received his earliest impressions of life. Of baronial lineage, his father was a chamberlain of Frederick the Great, and a personal intimate of the succeeding king, but he appears not to have been gifted with any striking qualities. Not so the baroness. She, to whom her son was indebted for the conduct of his education, and whom he loved and venerated—she was no ordinary woman. Of that sturdy race of French protestants whom the revocation of the edict

of Nantes scattered abroad to the advantage of every country where they fixed their homes, this lady appears to have transmitted to her son the cheerfulness, vivacity, and quickness of apprehension which belonged to her own race, while he inherited from his father the tenacity of purpose for which the Teutonic character is so much distinguished.

The well-known law that the mothers of great men are remarkable for force of character, and a quick and ardent genius was perfectly illustrated in the case of Humboldt. Therefore let her name be added to the long list to vindicate not only the superior influence of woman in moulding the character of her children, but the superiority of woman herself to man. For why was the first man fashioned out of the dust, but the first woman out of man's own body, if it were not to prove the superior refinement of her nature, and show that she is one step farther removed than he from the grossness of earth? Or why was she the last created if it were not to show that moral power, the sole faculty in which she surpasses man, is of greater potency than pure intelligence? It is the combination of those gentle arts which woman best knows how to employ, with her instinctive perception of right and wrong, and her inflexible will, which have rendered her no less præminent in ruling nations than in training youth.

When the education of Humboldt was about to commence, the first blows had been given to that scholastic method which took no account of the outer

world and its phenomena, but treated the mind as a piece of mechanism which was made to operate, according to the laws of rhetoric and logic, as it had done for centuries before. But the writings of the great naturalists who have been mentioned, and, still more, the eloquent but extravagant and fallacious writings of Rousseau, had awaked a love of nature, which, however much it was tinctured with sentimentalism, possessed a genuine vitality which time has only strengthened, as it must do all that is in harmony with the human soul. Hitherto, the faculty which had been chiefly cultivated was memory, and a memory too often filled with barren formulæ rather than with facts; but under the new inspiration Nature was investigated to furnish the materials on which the intellect might expend its powers of classification and reasoning.

The first tutor of Humboldt's boyhood was Campe, a man who had discarded the scholasticism of ordinary pedagogues, and sought to inspire his pupils with a love of nature as the motive, and to incite them to a study of nature as the pathway, to all true knowledge. It was he whose earnest and lively genius has caused many a heart now before me to thrill with the adventures of the Swiss family Robinson, and whose stirring tales of sea and land must have inspired his pupil with his earliest longing for the life of travel and adventure, which afterwards rendered him so famous.

Hardly a year elapsed before a second teacher

(Kunth) succeeded, who, if he grounded his scholar more thoroughly in ancient literature and abstract science, was none the less zealous in cultivating in him a spirit of inquiry into natural phenomena. By the discipline of the reason he insured an accurate, persevering, and fruitful investigation of the laws of matter. His aim was to fit his pupil for that universality of knowledge which he afterwards, in so singular a degree, attained, to foster every faculty that gave promise of productiveness, but, above all, to form a solid foundation on which whatever superstructure fate or will might build, should rest securely.

It is interesting to observe how differently this training affected Alexander von Humboldt and his elder brother, William. By both the same lessons were conned, the same natural scenes frequented, and the same instructions were received, and yet their paths in life were as opposite as the poles. The one was a naturalist, the other a scholar; the one a historian of the material revolutions of the globe we inhabit, the other of those which time has brought about in the languages, the arts, the literature, and the politics of mankind. It is, indeed, true that "Just as the twig is bent the tree's inclined," but no training whatever can change its innate qualities. The parent who predetermines a career for his children without regard to their native tendencies, is guilty of egregious folly. The best education is that which fortifies all the faculties, and, at the proper time,

directs their combined strength into the channel which nature has marked out for them.

At the age of eleven years Humboldt displayed no striking talents. Compared with his brother's, his memory was singularly inapt to acquire or retain the botanical names of plants; and he, the traveller, whose journeys through forests and deserts, and whose ascents of mountain pinnacles partook of the marvellous, and who attained a length of years of which there are few examples, had a feeble constitution, was thought too delicate for study, and, even when at the University, was a suffering invalid. Yet as one who knew him said, "his body was the victim of the excessive activity of his mind." It is remarkable that Cuvier, the friend, and in some sense the rival of Humboldt, was also a thin and feeble invalid in his youth, and, like Humboldt, only owed the vigor and endurance of his maturer years to a life of sobriety and of active exercise in the open air.

While the associates of Humboldt were crazed by the false sentiment and extravagance of Wilhelm Meister and kindred works, he was tranquilly devoting himself to the study of the natural sciences, political economy, and mechanics, with a steady reference to those plans of travel which he ultimately carried out. The same purpose led him to Hamburg to obtain an insight into commerce and navigation, while on the other hand he cultivated his favorite study of geology by an examination of the basaltic formations of the Rhine, of which he published an ac-

count. It also accompanied him in his subterranean labors as Inspector of the gold mines of Beyreuth and Anspach, where he found time for a complete scientific description of their botanical productions, while, in his official capacity, he was improving the administration of the works so as greatly to increase their productiveness.

He received this appointment at a very early age, and it cannot be denied that in his rapid advancement to a post of great authority and responsibility, he owed something to his name and rank as well as to his extraordinary talent. He was in a country where, more than anywhere else, the law of succession is observed in all things, and where he might have wasted his life in waiting for the appointment which he received, without his solicitation, from the government, had he not belonged to a social class towards which the patronage of power was then, still more than now, directed. It was, however, not less creditable to the sagacity of the Minister who divined the genius of Humboldt, than to the modesty of the latter, who was ready to excuse himself from an appointment which forced him to supersede a crowd of officers who were his seniors in age and his superiors in experience. For, while the fruits of his official labors justified the government, his own zeal and intelligence, and his success in ameliorating the condition of the mining population, secured him their affection and respect.

Meanwhile the hope which he had cherished in

childhood of becoming a scientific traveller never forsook him. He had formed an intimate friendship with George Forster, one of the companions of the great navigator, Captain Cook. This person warmed him to enthusiasm by his stirring narratives of adventures by land and sea, and confirmed in him that love of liberty to which he remained faithful even at the summit of his fame and fortune. The longing for an explorer's life was singularly quickened by his residence among the mountains, which also afforded him abundant opportunities for the pursuit of geological inquiries, and familiarized him with the application of physical and chemical laws, and with the use of the instruments employed in their investigation, as well as with the details of practical astronomy. It was also stimulated by occasional visits to the mountainous regions of Switzerland, in which, as at all other times, he allowed no moment to pass without paying him its tribute of scientific knowledge. Even the daytime was too short for his researches, and so earnestly did he pursue them as to reduce his hours of rest to the shortest possible period sufficient for recruiting his exhausted strength.

Thus for five years he devoted himself to the duties of his office and to the zealous pursuit of science, when the death of his mother, and only surviving parent (in 1796), left him free to follow the bent of his inclination. Unfortunately, at this juncture, the armies of the French Republic were devastating Holland and Germany, and their inhabitants were too much ab-

sorbed in preparations for war to feel much interest in the arts which flourish only in peace. But the King of Prussia concluded a treaty of peace with his powerful antagonist, and Humboldt was soon afterwards dispatched to the head-quarters of the French army on a diplomatic mission. He there saw what has recently been imitated with so much success during the Franco-Sardinian campaign in Lombardy, a balloon, which was kept constantly filled, and was frequently made use of by the French commander to observe the movements of the hostile forces. He there also met with General Desaix, who endeavored to enlist him in the scientific expedition which was preparing to accompany the French army into Egypt, and whose labors and their rich results have shed such mellow lights upon the murky clouds of war. But Humboldt, true to his first love, and to the plans which he had so slowly and so perfectly matured, could not easily be diverted from them even by such flattering proposals. His plan for distant travel completely absorbed his own thoughts, and he inspired all around him with the same ardent longing for its fulfilment, and the same zeal in carrying it out.

Born and bred in a country which had no direct connection with lands beyond the sea, he experienced an unquenchable desire to behold the ocean, and his imagination, quickened and elevated by a life among the mountains, strained its pinions towards the vast expanse of waters "that runneth the earth's wide regions round." But it was not merely as a lover of

the picturesque, not merely with that fondness for romantic adventure, or that restlessness and impatience of the restraints of civilized life which have driven so many modern travellers across the deserts of Africa and the steppes of Asia, in search of new emotions and a relief from their satiety of civilization—but it was as a philosopher who felt within him a consciousness that he could interpret the language of Nature, that he burned with a passionate desire to unfold the leaves of her vast and eternal volume.

But as yet no opportunity had presented itself of carrying out his plans. At this juncture a wealthy English nobleman invited him to join an expedition to Upper Egypt, and he embraced the proposal with an enthusiasm perhaps the greater that he regretted his having declined the safer proposition of Desaix. He even repaired to Paris to procure the philosophical instruments necessary for his researches, but there he learned, to his dismay, the departure of the French fleet for Alexandria, and the arrest of his proposed companion at Milan. Chagrined, indeed, but not discomfited, he found consolation in the society of the eminent men of science for which the French capital was even then renowned, and in the lively interest which he felt in a voyage of discovery and circumnavigation projected by the government, and in which he was courteously invited to take a part. Four months of mingled hope and fear terminated in the abandonment of the project, for the funds destined to carry it out were diverted from their original purpose by the urgent

demands of the war which still was raging. But this very delay and the defeat of Humboldt's expectations led to his forming the acquaintance of a man with whom his fame was destined to be intimately associated. This was Aimé Bonpland.

Shortly afterwards (in 1798) he obtained permission to take passage with his friend on board of a Swedish vessel of war, which was expected to sail from Marseilles to Algiers, whence they intended to penetrate through Egypt to the Persian Gulf and thence to the interior of Asia. All was prepared, and the companions hastened to Marseilles to await the arrival of the promised vessel. But they waited in vain. Day after day they climbed the hills behind the city with longing eyes to catch the first view of the expected ship. Sail after sail rose above the horizon, but turned to some more distant port, or bore another than the wished-for flag. Thus for two months was hope delayed, and at last with very heart-sickness the travellers learned that a storm had driven the ship upon a distant coast.

Almost maddened by these repeated disappointments, they determined to go alone. A small vessel was in port bound to Tunis with cattle, and on it they resolved to sail. But when the skipper insisted upon lodging his bovine freight upon the quarter-deck, a discussion arose which delayed the vessel's departure. And fortunate that it was so! for presently tidings arrived that the Bey of Tunis persecuted and imprisoned all Frenchmen found in his

dominions. The travellers turned sorrowfully away from the scene of so many and such bitter disappointments. Yet in them all it seems as if the hand of Providence may be discerned. For had they not occurred, it is probable that the expedition which has associated their names in a joint immortality would never have been undertaken, and one of the most glowing pages in the history of the world would have remained a blank.

To such men inaction is torture. In order to occupy their time until a more propitious opportunity should arise, they crossed the mountains into Spain and gathered an ample store of information regarding the climate, geography, geology, and natural productions of that kingdom. We may imagine, after having explored the provinces so rich in all the gifts of a bounteous nature, and as Humboldt went up to Madrid, that the sting of his disappointments may have awakened in him the recollection that 300 years before, Columbus had trod the same path after his proposal to discover a new world had been disdainfully rejected by his native country, and been fraudulently but fruitlessly made use of by Portugal. Perhaps he secretly indulged a hope that his own reverses, like those of Columbus, were but a discipline, and a prelude to a splendid success under the patronage of the Court of Spain.

That country was still rich and powerful, and her sceptre still swayed the South American Continent, Mexico, and the islands of the adjacent seas. King

and Minister extended the most cordial reception to Humboldt's enthusiastic representations of the discoveries that awaited him, and of the sources of knowledge, and of material wealth, which he could not fail to lay open for Spain. He received the royal rescript addressed to all the viceroys and governors, of New Spain, commanding them to afford the travellers aid and protection, and from the Secretary of State an order for all colonial authorities to allow the free transport of the scientific instruments and collections belonging to the expedition. Thus fully provided with everything to secure the complete fulfilment of their hopes, Humboldt and his companion repaired to Corunna where they were to embark upon their voyage of discovery. Here once more, but for the last time, war, that pitiless foe of the arts of civilization, threatened to prevent their departure. A British fleet denied them egress from the port; but a friendly tempest dispersed the blockading force and enabled them to reach the open sea. It was a favorable omen that the ship on which the fortunes of Humboldt were embarked bore a name associated with prosperous adventure in the Western world, the name of "Pizarro," the conqueror of Peru.

How must the traveller's heart have throbbed with emotion when, in the evening twilight, he stood upon the vessel's deck as she stealthily crept westward, and as one after another the lights along the shore disappeared, and, in their place, the stars arose upon the eastern horizon—and then as he turned, and in

imagination contemplated the fulfilment of his nine years' dream—beheld the lands which he longed for as a lover for his absent mistress, and, with their charms as distinctly pictured in his mind as if they had already become familiar to his senses. The ocean inspired him with a new delight; it lay before him as an image of that immensity of knowledge, to explore which had always been his supreme desire, and to which he had devoted all the zeal and energy of his nature. Keenly alive as he was to all the beauties of creation, and knowing better than any one else how to clothe their description in the choicest terms of his poetical mother-tongue, he scanned them for a nobler purpose than to regale the imagination, or flatter the senses. Every inanimate, and every living thing, was to his eye an illustration of some great natural law; and whether it was in the waves that sparkled with phosphorescent light, or in volcanoes that belched forth flames and lava streams; in breezes that wafted the delicate nautilus, or in hurricanes that uprooted mighty oaks from the mountain-side; in flowers that enamelled the prairie, or in forests that clothed the hills; he beheld not only beauty, or power, or grandeur, but also the illustration and interpretation of those great laws which raised the earth from beneath the abyss of waters, which filled it with life, and which sustain the infinite variety of its living inhabitants.

Time would fail me even to present a sketch of the incidents or the results of this memorable voyage; I

can but allude to the ascent of the peak of Teneriffe where the thin and frozen atmosphere almost congealed the traveller's blood, while the soil beneath his feet was scorching as a furnace, and around the mountain's base a luxuriant vegetation and a delicious climate surrounded him with all the charms of an enchanted garden. Here Humboldt discovered that great law by which the temperature determines the character of the vegetation, and not only in the several zones of latitude, but in those also which are at different degrees of elevation above the level of the sea. I can only allude to his arrival on the Western continent, at Cumana, in Venezuela, where every object wore to him a novel aspect; where the soil is so wondrously prolific, and the inhabitants, like spoiled children of Nature, pass their lives in a luxurious indolence compared with which the habits of the European voluptuary are toilsome and fatiguing. Nor can I say more of his sojourn in Caracas, whose valley appeared to him a Paradise and its climate an eternal spring, a spot where one might long to spend a lifetime. Yet thirteen years after Humboldt's visit, on this delightful spot, thirteen thousand persons perished among the ruins of their dwellings.

"It was on Thursday of Holy Week. The day was hot; the air was still; and not a cloud was in the sky. It was four o'clock in the evening, and the churches were crowded with worshippers. Suddenly the muffled bells, with one accord, began to sound,

but it was God's, not man's, hand which tolled that funeral peal. The earth heaved and quivered, subterranean thunder roared, and in an instant the city of Caracas had ceased to exist."

I would fain add something of Humboldt's exploration of the Orinoco and the Amazon, of his climbing the peaks of Chimborazo and Cotopaxi, more than 18,000 feet above the level of the sea, the greatest elevation that man had at that time attained, of his examination of Mexico and Central America, of his sojourn in Cuba, and of his brief visit to the United States. But I must forego this pleasure. Let me only add that in all which concerned the Western Continent he never ceased to feel a lively interest. It was at his urgent suggestion that, in 1828, Bolivar caused the Isthmus of Panama to be explored, and, twenty years later, Humboldt contended for a more exact survey of the levels between the two oceans, declaring all objections to the construction of a canal between them to be rash and unfounded. The soundness of his judgment and the correctness of his anticipations have been confirmed by recent surveys, and there is no longer any physical obstacle to the accomplishment of this stupendous undertaking.

In 1804, after an absence of five years, Humboldt landed in Bordeaux. The tender and sickly boy had become a robust and much enduring man. He and his companion had traversed unexplored countries, encountered innumerable dangers by field and flood,

from climate, accident, men, and beasts, and yet he returned safely home freighted with a fund of knowledge so vast, that more than twenty years were necessary for its complete publication. It comprised the narrative of his travels; a description of the antiquities of the New World; of the animals and plants of the Western Continent and its islands, and of their climate, and geological and physical features; of the political condition of the Spanish colonies; and immense and magnificent drawings illustrating the vegetable productions of these countries, which were prepared partly by himself and partly by his distinguished associate.

Not Columbus, on his return from his first voyage, entering Barcelona in triumph, surrounded by captive Indians, and preceded by attendants bearing baskets filled with gold and jewels, brought gifts so precious as those of Humboldt. The one opened to Spain the gates of a new empire, the other revealed to the world the secrets of nature and the laws of the universe; the one became the real, although the innocent, cause of reducing whole nations into servitude, the other, by the importance which he gave the Spanish colonies in the eyes of the world, and in their own esteem, paved the way for the revolutions which rendered the nations of South America once more independent.

No man of less consummate knowledge, of less ardent genius, of less steady and undaunted resolution, could have accomplished so much; and when we remember that it was as a private man, and al-

most wholly without extraneous aid, that he performed these wondrous journeys, and returned laden with such an unexampled wealth of knowledge, amazement fills us at his devotion and self-sacrifice; for had he been a man of common mould he would have preferred to pass his life in learned leisure, or in coquetting with Nature as an amateur philosopher.

Humboldt's passion for travel, and for studying the great features of the earth's formation, was not satiated by his American researches. In 1810 a proposal was made to him by the Russian Emperor, Alexander, to explore the unknown regions of Central Asia. He seized it with avidity, declaring that he would shrink from no risk necessary to bring the expedition to a prosperous conclusion, even if he knew that of nine persons composing it only one should survive to tell their story. But war stood once more in the way of science, and hostilities having broken out between France and Russia, the project was abandoned. It was not, however, forgotten, and in 1829, under the patronage of the Emperor Nicholas, Humboldt set out upon his Asiatic journey. He was now sixty years of age, yet he entered enthusiastically on this great undertaking, assuming as his own peculiar province magnetic observations, astronomy, and physical geography. The excursion lasted for eight months, and embraced a distance of more than 2,000 miles, extending from the Ural Mountains to the frontier of China, and through Turkestan to the Caspian Sea. It resulted in new views of the

internal arrangement and the elevation of the Asiatic Continent, and gained for the enterprising traveller new titles to the admiration of the world.

At the conclusion of his American voyage Humboldt repaired to Paris, then in all the splendor of imperial rule, and endeavoring to efface by the cultivation of science and art the bloody stains of its recent saturnalia. It was the only capital where any considerable number of scientific men were associated and actively engaged in the search after new truths, and the only one where it was possible for Humboldt to publish in a fitting manner the results of his American explorations. Here he was surrounded by such men as Cuvier, Gay-Lussac, Arago, Vauquelin, and Laplace, and the other members of the Academy of Sciences, of which he had been elected an extraordinary member, and here for twenty years (1808—1827), he lived, devoted to incessant toil, and receiving the highest honors which his almost adopted country could bestow. All of his great works, except his last, were published, originally, in the French language, even that which recorded his Asiatic researches, and doubtless he would have desired to pass his life in the society of Paris, so much more congenial to him than that of Berlin, could he have been allowed the freedom of a choice.

But the wishes of kings have the force of commands. Five years before he had accompanied the King of Prussia as a travelling companion in Italy, but, on his return to Berlin, a longing for Paris, like

a home-sickness, possessed him. The king endeavored to detain him, but he, pleading his engagements, and particularly his unfinished publications, for the moment was set free. But Humboldt was a philosopher of too rare a species in Berlin, a city which just then was striving to make itself a name by its great collections of antiquities and art, and its public edifices copied after the works of classic antiquity—too rare to be allowed so easily to escape. The king accordingly conferred on him the title and emoluments of a Privy Counsellor, which obliged him to be a constant attendant on the person of his Majesty. On the accession of William IV. his position remained unaltered, for this prince, who was highly accomplished in every department of knowledge, entertained a sincere regard for Humboldt, and employed every honorable influence to attach him to himself, by rendering him his scientific adviser and his habitual companion. But it is not the less certain that the official duties of Humboldt seriously interfered with his devotion to his favorite pursuits, to which he would fain have wholly devoted his declining years, and that his rank and title at court, and the honorary distinctions he was constantly receiving from the governments as well as the learned societies of other countries, but poorly compensated him for his lost liberty and his once exclusive association with the philosophers of Paris.

The later years of his well-filled life were devoted to the preparation of a work which may be regarded

as the crowning illustration of his career. With senses still undimmed, and mental faculties clear and strong as in the noontide of his existence, he composed his *Cosmos*, that wonderful survey and analysis of the whole visible creation, in which he has shown with a felicity which belonged to him alone, that the most poetic style is the noblest in which the phenomena of the universe can be portrayed, and is not necessarily incompatible with the precision and clearness which are essential to scientific statements. A poetical temperament which we must presume to have been associated in him with so lively a perception as he possessed of the beauties and harmonies of nature, seems never to have led him astray from the pathway of literal truth, and rigid induction from well ascertained facts. Without affecting or feeling any contempt for speculative reasoning, he expressly disclaimed the intention of attempting to raise himself to the perilous heights of an abstract philosophy of nature, declaring his great work to be a contemplation of the universe based upon a rational empiricism, that is, upon the totality of the facts discovered by science, and subjected to mental comparison and combination. Not that a mere aggregation of facts is sufficient to constitute a science, or that a large number of them is in every case requisite for that purpose. In more than one instance, of sciences whose laws are uniform, a single fact may suffice to disclose them. Such was the case when Newton deduced the law of gravitation from the falling of

an apple; when Kepler inferred the orbits of the planets from the movement of a chandelier; when a piece of Iceland spar in the hands of Huyghens, and then of Arago, revealed the great law of the polarization of light; and when the force that presides over nearly all the transmutations of matter was discovered by Galvani in the quivering muscles of a frog.

But it is by beholding Nature as she really is that we penetrate her mysteries. The poetical philosopher, or the philosophical poet, is apt to clothe her with a drapery of his own weaving, and to mistake the artificial tissue for a part of herself. But the true philosopher, who, like Humboldt, only warms his intellect at the fire of his imagination, and never fails to distinguish between the sensual charms of Nature and the delight which is inspired by the investigation of her laws, loses nothing of his intellectual dignity, while he gains incalculably in that sacred enthusiasm without which his minuteness would become wearisome and his precision cold and dull. As Humboldt himself has said, the details of science are utterly irreconcilable with the exertion of the poetic faculty; but, the higher one rises in the generalizations to which these details are subservient, the broader, the more harmonious do they become, and at last he reaches that empyréan from which at one view he can embrace all the phenomena of the universe, and in which the loftiest imagination is most at home.

This desire to generalize, and to refer all the powers

of Nature to one central cause, appears to have existed in every age and even among the least civilized nations. "In all," says Humboldt, "we discover a secret sentiment, and one often mingled with dread of the mighty unity of the forces of nature, of an invisible and spiritual essence pervading them, whether it develops the flower or the fruit, or whether it causes the earth to quake, the forests to roar, or the clouds to thunder in the sky." But he was himself the first to furnish a scientific representation of the harmonies of the material universe. He was, indeed, alone fitted to do so; for before him none other had at the same time possessed so vast an aggregate of physical facts on which to build, and so wonderful a talent for generalization.

It would seem as if Nature had destined him, her favorite child, to be her great interpreter. Of him it could not, as of so many sons of science, be said, "Fair Fortune smiled not on his humble birth." From his earliest years to mature manhood he lacked no instruction which wealth, rank, and affection could lavish upon him, and no experience which it was in the power of official liberality to afford. Wherever he went in his adventurous career, the same cordial welcome and co-operation awaited him; princes and governors vied in promoting his progress; and the lovers and cultivators of science in every country esteemed it a privilege to contribute of their own stores to enrich him, and through him the world.

How vast they were, and how liberally they were bestowed by him, has already been seen in his life's devotion to the publication of his great works, which, in a pecuniary sense at least, could never compensate him for the toil he had bestowed upon them. He was equally ready by letter, or in conversation, to answer the questions that were proposed to him, and to give that advice which hundreds have found their safest guide in scientific undertakings.

In his personal intercourse he was always cheerful, courteous and gentle, full of anecdote, and, when his companions were men of eminence, wonderful in the exuberance and variety of his illustrations. After a few hours' interview with him, Goëthe exclaimed: "What a man this is! I have known him very long, and yet he perpetually surprises me. One may safely say that in knowledge and science no man living equals him, and for variety of attainments I know of no one to compare with him. On every subject he is perfectly at home, and he overwhelms me with his intellectual treasures. He resembles a fountain which pours its inexhaustible and refreshing streams continually, while other men slake your thirst from shallow pitchers only."

Of his literary style it may be observed that although he often treats of subjects which in themselves are dry, and enters into an infinity of scientific details which appear but little adapted to an elegant form of expression, yet he possessed the rare talent of presenting them in language which is flowing, clear, and

expressive, remarkable for its simplicity and an exquisite choice of words, and which, when the subject permits it, becomes animated, picturesque, or sublime.*

Of Humboldt it may be truly said "the style is the man." Indeed, when the universal interest attaching to him induced many to apply to him for the particulars of his eventful life, "My life?" he replied, "my life is in my writings." To them and to collecting the materials for them, he may be said to have devoted himself body and soul. Even during his long residence at Berlin, where his official duties obliged him to waste much of every day in personal attendance on the King, and in the society of the court, he found time to carry on a correspondence with all parts of the world, and with people of every degree; to take an active part in the labors of learned and scientific men around him; and to complete that marvellous monument of meditation and research, the *Cosmos*. But such prodigies of industry could only be performed by one who sacrificed all considerations of personal ease and comfort to his love for knowledge, and to the great objects he had resolved to achieve. So until he had passed beyond the ordinary limits of old age he obliged himself to be contented with four hours of sleep; and even later, when the weight of four score and ten years lay upon his head, he toiled while others rested, and oftentimes the morning's dawn surprised him at his desk.

* Klencke.

To such a man, so wedded to science, and finding in it the purest and noblest enjoyments of which the human soul is capable, the artificial exactions of society could only have been embarrassing, and its honorary distinctions valueless except as expressions of the good-will of those who bestowed them. Besides his courtly rank and title, he held fellowship in every great learned society of the world, and from nearly every prince of Europe he had received the insignia of some knightly order. Yet such was the simplicity of his life and manners, that it was only on rare occasions, and then only when official duties required it, that these ornaments were displayed upon his breast.

But for this peculiarity there was a reason even more deeply founded than his absorption in subjects of scientific interest. In his earliest years he had imbibed from the writings of Rousseau, and from the conversation of Forster, a love of liberty in thought and person which became incorporated with his character, and to which, as to every other cause that he espoused, he remained faithful until death. Even the atmosphere of a court could not wither or weaken this sentiment in his heart. Surrounded by obsequious courtiers, and basking in the favor of royalty, he never, for a moment, laid aside the prerogatives of a freeman, nor failed on proper occasions to maintain the cause of constitutional liberty, and exhibit his regard for those who were in any manner identified with it. On this account, as well as for other and

personal reasons, he was selected, in 1830, as the fittest person in all Prussia to salute the advent of Louis Philippe to the throne of France. Not a year before his death he was one of the first at the election polls in Berlin, "and, on some one presenting him a ticket with the name of the reactionary candidate, he thanked him with his usual politeness, and told him that he was already provided, at the same time putting his hand into his pocket and producing the liberal ticket."*

It may also be taken as an indication of his liberal sentiments that among the visitors of all nations who called to pay their respects to him, none received a heartier welcome, for their country's sake, than American citizens. "The card of many an unknown and obscure traveller, with the inscription 'I am an American citizen,' presented at his door has been a ready passport to his presence, when even a personal friend, or an illustrious visitor, not offering this talismanic prestige, would be denied."†

It is not to be wondered at that a man, who, by his intellectual greatness, towered above the loftiest of his cotemporaries, and who, by the simplicity, gentleness, affability, and modesty of his manners, made even the humblest at home in his society, should have become, as it were, a household divinity with the citizens of Berlin. Every one knew him, and every one loved him. We are told that when his venerable

* Corresp. N. Y. Herald, Berlin, May 7, 1859.

† D. D. Barnard.

form was seen in the streets, bending like a sheaf of ripened wheat under the weight of years and honors, the crowd would reverently separate to let him pass without disturbing the reflections in which he was absorbed; and the rudest would whisper to his neighbor as a thing of interest even to him, "there goes Humboldt." His figure was of medium size, his hands and feet delicately formed, his forehead broad and high, and shaded with locks of silvery whiteness; his blue eyes were full of expression and undimmed by age, and a peculiar smile, in which were mingled both wit and tenderness, played around his mouth as the unconscious expression of his greatness and his gentleness.

Humboldt had now reached his ninetieth year. Not a single one of his cotemporaries survived. Old kingdoms had disappeared, and new ones had been created. A nation had been born on the western shores of the Atlantic, and the society of his childhood had given place to one in all respects its opposite. But from his earliest years he had sworn allegiance to the everlasting laws of Truth, and when the messenger of Heaven came to call him to another sphere, he found him with his faculties still unimpaired, ready to enter upon a grander voyage of discovery, and a more perfect appreciation of the glories of the universe than those which had rendered his name immortal upon earth.

All of Humboldt that was perishable was committed to the tomb amid the pomp that befitted the man

of rank, the courtier, and the king's friend and counsellor; amid the homage of the great scientific bodies of which he had longest been the most illustrious ornament; amid the solemn reverence and silent tears of the multitude who had wondered at his wisdom, and loved him for his virtues. The post of honor in the mournful procession was assigned to our countrymen in Berlin with whom, not two months before, he had celebrated the birthday of Washington, exclaiming, as our banner canopied his venerable head, "I am half an American citizen!"

Thus two worlds met to mingle their funereal chaplets upon the coffin of one of those rare men, of whom it is difficult to decide, whether he displayed more humility in his greatness, or more dignity in his simplicity; who adorned the highest and graced the humblest position, and who, having had most experience with men of all climes, and ranks, and characters, was never known to have made an enemy.

Long may the memory of his achievements in science, and of his eminent virtues as a man, teach us that the more humanity is purified, the more do wisdom and goodness tend towards that unity which is perfect in God alone.

