

Smith, called the father of English geology; and Alexander von Humboldt. Various sciences and arts were thus represented. I would not attempt to trace characters so varied,—destinies so unlike: for me the life of Humboldt, in its consistency, its integrity, its success, and its rewards, possesses a complete power and symmetry which none of his renowned compeers could show. Few men have lived for so long a time under the eyes of the world. There is no life, however insignificant it may appear, which does not in some way advantage the world. But a life like Humboldt's, enriched with the experience of two centuries, and illuminated by a long series of splendid achievements, opened a new avenue into the realms of truth and of science. I would, therefore, attempt to speak of the mind and the heart of Humboldt; of his capacities, his ideas, his character; of his place, not merely as a man of science in the world of knowledge, but pre-eminently as a man in the world of men. It is good to contemplate the union of a well-balanced character with a completed and harmonious destiny. Like the Grecian mother, who feasted her eyes on perfect statues, that her unborn child might possess something of their beauty, so that divine order which Humboldt sought for with religious fervour throughout the material world, seemed at last to be reflected in the wonderful symmetry of his life. Fortune, however, was less partial than people were apt to suppose. And, though Humboldt was born under a happy planet,—and it is difficult to imagine circumstances more favorable than those which surrounded his childhood,—yet the same good fortune in hundreds of other instances would only have produced mediocrity. The germ of character lay far below the influence of circumstances.—F. A.

SCHWARZENBERG, in "*Alexander von Humboldt, or What May Be Accomplished in a Lifetime.*" *

HUMBOLDT'S EARLY INTEREST IN NATURE

The history of Humboldt's early life, though meager and imperfect, yet furnishes the necessary clue to its grand development. His first teacher (J. H. Campe) was the translator [into German] of that wonderful fiction, more real than reality, "*Robinson Crusoe.*" His friend and companion was George Forster, who had accompanied the celebrated Captain Cook in his second voyage round the world. All his early recollections were mingled with stories of travel, adventure, and discovery; and wandering among the pine woods of his father's estate, his imagination enlarged them into vast continents, the arms of the lake expanding into breadths of ocean, hiding somewhere in the distance unknown islands. And long afterwards, when much of his labor had been accomplished, and his sacred fame was all secure, he observed that the impression aroused within us in early childhood always took a graver direction in after-years. The educational method of Rousseau had already found entrance and acceptance in Prussia, and had given rise to more liberal plans for the education of youth; and to those ideas Humboldt was indebted for a course of training which developed his body and mind in an equal degree, and allowed

* "The reader will no doubt meet with many defects of style inseparable from efforts to think in one language and express those thoughts in another; and I therefore bespeak his indulgence for my attempt to write in a tongue I never learned from my mother's lips." *Extract from the Author's Preface.*

HUMBOLDT'S DEVOTION TO SCIENCE

The most prominent traits in Alexander von Humboldt's character,—universally acknowledged,—were his sincerity and his simplicity. Possessed with all the tastes of a man of the world; endowed with all the graces which the best societies of Europe could impart; with all the prerogatives of his birth and position; with all the tempting prospects of an exalted position in his own country; he, with characteristic sincerity, followed the natural yearning of his soul, and consecrated himself as a servant of science and humanity. He sacrificed cheerfully ease and comfort, and laid upon the altar of science all in search for that knowledge which would expand the conceptions of ourselves and of the world in which we live; and this I consider to be his high moral position as a man in the world of men. Humboldt, in discovering the secrets of nature and in explaining them to mankind, caused of necessity a great change in the prevailing ideas of the human race. His object was to labor for the whole: his actions are interwoven with the history of mankind.—F. A. SCHWARZENBERG.

THE MAGNITUDE AND COMPREHENSIVENESS OF HUMBOLDT'S RESEARCHES

Humboldt and Cuvier entered simultaneously upon their researches as naturalists. Humboldt like Cuvier directed himself to facts; he examined and compared without ever taking a direct part in the battle of the philosophers, because he had entered upon a new road—a

higher and a more comprehensive point of view. He endeavored to comprehend the universe in all its grandeur. Nature should, through a perfect comprehension of its powers and its laws, in general and in particular, become a lively object of human knowledge—an open book in which the isolated and the small explains itself through the whole and the great. The immense territories of his researches were:—(1) The knowledge of the earth and its inhabitants; (2) the discovery of the higher laws of nature, which govern the universe, men, animals, plants, and minerals; (3) the discovery of new forms of life; (4) the discovery of territories but imperfectly known, and their various productions; (5) the acquaintance with new species of the human race,—their manners and languages, and the historical traces of their culture. In this extensive field Humboldt labored with unwearied activity, care, and perseverance. The natural consequences of his researches manifested themselves in all the branches of scientific and practical knowledge, and found application in numerous circles of life. His vivid and glowing descriptions, never yet surpassed, of scenes witnessed in different countries, awakened a desire for travel. They furnished new instruction. The charm of his descriptions inspired numerous youths with a love for nature's beauty, and many a thoughtful man with the resolve to study the laws of nature; and even many a female heart, attracted by the fabulous tropics and by the grandeur of tropical scenery, learned to pronounce with veneration the name of him whose person was surrounded, in their conception, with the enchanting brightness of the mysterious and the marvellous.—F. A. SCHWARZENBERG.

READERS' AND STUDENTS' NOTES

1. Alexander von Humboldt was once a frequent subject of popular biography, but in recent years few accounts of him have been written. This is not because of any change in the world's estimate of Humboldt, but simply because the world as a rule takes more interest in contemporary great men, than in the great men of a bygone age. An excellent account of Humboldt and of his work, suitable for popular reading, is Schwarzenberg's "*Alexander von Humboldt, or What May Be Accomplished in a Lifetime.*"

2. A similar work is Professor Klencke's "*Alexander von Humboldt, a Biographical Monument.*" This has been translated from the German by Juliette Bauer.

3. The well known publishers, T. Nelson & Sons, issue a similar work, beautifully illustrated and adapted to young people, entitled "*The Story of the Life and Travels of Alexander von Humboldt.*"

Sir Humphry Davy

full play to the gratification of all his natural tastes. He was not the only child for which that crazy philosopher received a father's blessing; but in no other instance was his system so nobly justified as in Alexander von Humboldt. Noticing that the boy exhibited a more than ordinary interest in trees and plants, his teacher made him acquainted with the rudiments of botany, and explained to him the twenty-four classes of the Linnæan system. He soon perceived, however, child as he was, that one science was but a single door to the great temple of nature; and he was not satisfied without possessing the keys to all; and his researches, commencing with the blossoming of a nettle by the wayside, finished their course among the beams of the remotest star.—F. A. SCHWARZENBERG.

HUMBOLDT THE DISCOVERER OF AMERICA FOR SCIENCE

Humboldt broke through the barrier which separated science from actual life. His object was not only to labor for the advancement of science, but more for the benefit of humanity. From this point of view we must consider the expression of an enthusiast who somewhere exclaimed that Humboldt was related to, and identical with, a conqueror of worlds; a reformer, a founder of a religion. Few ever painted with so much fidelity the remarkable scenes he had witnessed. This faithful representation of nature is the rare and peculiar merit of Alexander von Humboldt. No one could reproduce with more power the fiery atmosphere of the South American valleys. His habits of observation as a naturalist aided in giving character to his descriptions of scenery. In his voyage on the Upper Orinoco, he referred again and again to the sad-

dening impression produced by those magnificent scenes, where a savage vegetation seemed to have usurped the whole earth, and man was nothing in comparison. In those reflections the man's heart seemed rather to speak than the philosopher's brain. This equinoctial journey may be considered the great personal achievement of Humboldt's life, consuming almost his entire fortune, and twenty years of labor. It caused a considerable sensation in Europe, because such a gigantic undertaking of a private individual was without a parallel,—free from all personal egotism, a voluntary sacrifice for science and humanity. Humboldt's travels, prepared for by the discovery of the western hemisphere in the fifteenth century by Columbus, reflected with peculiar interest on the consequences of these discoveries; because he became, in contrast to Columbus the geographical explorer of America, the scientific discoverer of these regions. Humboldt's name ought, therefore, to be placed at the side of Albertus Magnus, Roger Bacon, Vincent de Beauvais, Columbus, and Gama. The two latter are the discoverers of that space from which Humboldt dispersed the darkness; and, in reality, he discovered America for science.—F. A. SCHWARZENBERG.

HUMBOLDT THE REPRESENTATIVE OF THE AGGREGATE KNOWLEDGE OF HIS AGE

With, perhaps, the exception of Aristotle and Bacon, no man ever stood forward so prominently as the representative of the aggregate knowledge of his age. And it is impossible to estimate the influence he wielded in advancing the sciences—not only directly, but indirectly, in

the impulse he gave to other minds, and in aiding by his counsel and his means those who were struggling against difficulties. Never was a man less exalted by his own individual achievements; never was there a teacher so eager to be taught in turn; never a mind so humble under its wonderful weight of knowledge. . . . All the labors of Humboldt's life were but colossal fragments of a plan too vast, perhaps too sublime, for any single life to complete. It is true he enjoyed a much longer life, more abundant opportunities, more vigorous and tractable powers of mind, than are [usually] given even to the most fortunate of men; but this was not enough. He desired not merely a scientific survey of the earth, but the discovery of those eternal laws which governed its creation, and which still regulate its existence.—F. A. SCHWARZENBERG.

HUMBOLDT'S NOBLE AMBITION

If his life and powers had been adequate to the task, Humboldt would have devoted several years to the exploration of Central Asia. After that he would have wrested from Africa the secrets it contained. He then, from the knowledge thus collected, could lay down the science of climate; sketch the geographical outlines of continents; define the boundaries of the various systems of plants, animals, and men; and from the height of his vast experience strive to comprehend the secrets of that divine system, according to which the whole order of creation moves. When the astronomer Kepler, after twenty-five years of labor and suffering, discovered those mathematical laws by which the planets are balanced in space, and the whole solar system was unfolded to his view, he cried out, in

truly religious triumph, "Oh, Almighty God, I think Thy thoughts after Thee." To Humboldt the active forces of nature were equally the thoughts of God. Such noble daring as urged him to comprehend them, was, indeed, one of the sublimest devotion.—F. A. SCHWARZENBERG.

HUMBOLDT'S COMPREHENSIVENESS OF KNOWLEDGE

The mind of Humboldt was in one respect almost a phenomenon,—in its power of generalization, and at the same time of entering into minute details. It was not inaptly described by Lady Morgan "as reminding her of the trunk of an elephant: it could snap an oak, and pick up a coin." As a proof of his marvelous intellect, I will here refer to a series of sixty-one lectures, delivered in Berlin, perhaps one of the most remarkable courses of lectures ever delivered. They were:

Five lectures treating of the Nature and the Limits of Physical Geography, and including a General Sketch of Nature.

Three on the History of Science in General.

Two on the Study of Natural Science.

Sixteen on the Heavens.

Five on the Form, Density, Latent Heat, and Magnetic Powers of the Earth; and the Polar Light.

Four on the Crust of the Earth, Hot Springs, Earthquakes, and Volcanoes.

Two on Mountains.

Two on the Form of the Earth, the Connection of Continents, and the Elevation of Ravines.

Three on the Sea, as an Elastic Fluid Garment of the Earth.

Ten on the Atmosphere, and the Distribution of Heat.

One on the Distribution of Matter in General.

Three on the Geography of Plants.

Three on the Geography of Animals.

Two on the Races of Men.

These lectures formed the foundation of the stupendous production,—“*The Cosmos*.” Humboldt had previously delivered the same course in Paris.—F. A. SCHWARZENBERG.

HUMBOLDT'S FAME AND INFLUENCE AS A LECTURER

The first of this cyclus of lectures [as described in the previous selection] caused such an extraordinary sensation that not only all the men of learning in, and in the immediate neighborhood of, Berlin assembled, but from the most remote parts of Germany, the friends of science hastened to Berlin, in order to hear at least one of Humboldt's lectures, and to make his personal acquaintance. Night after night, the late King of Prussia, the members of the royal family, the principal members of the aristocracy, were present; and all the classes of the people, through the lively interest they took in these lectures, testified their pride in the celebrated Alexander von Humboldt. Nay, more, even the uneducated and the lower orders heard now his name. His personality appeared to them something wonderful and mysterious, and they were anxious to see him who had discovered a new world. Humboldt, unlike most other men of renown in the scientific world, in thus appearing publicly before the people, gave the noble and cheering example that a baron, a high officer of state, and a confidential counsellor of a king, did not consider it below his dignity to appear before the world as a teacher in the science for the advancement of which he had made such great sacrifices, and in which he occupied perhaps the most distinguished position; he testified that a true disciple of science ought not to consider

himself to belong to an exclusive class; that the representative of science should ignore all the prerogatives of his social position, if in the higher service of science. . . . These lectures spoken of were commenced on the 3rd of November, 1827, and concluded on the 26th of April, 1828; developed extempore and without notes.—F. A. SCHWARZENBERG.

HUMBOLDT'S MARVELOUS MEMORY

The memory of Humboldt was really wonderful. Even Macaulay who could repeat the whole of “*Paradise Lost*” from beginning to end, correctly, would have to yield to him in that respect. His memory, even to the last, seemed as keen, as vigorous, and as active as ever. He never hesitated for a name or a date, and never confounded the order of events. A friend once called upon him to discuss some points relative to the topography of Jerusalem: and, astonished at what he considered his marvelous memory of the streets and the houses, of the Holy City, asked how long it had been since he was there. “I never was there,” was the answer; “but I intended going sixty years ago, and therefore prepared myself.” A still more striking instance of this power of memory was exhibited when some ladies were brought to his house to be introduced to him. Among them was the daughter of a gentleman in Philadelphia, with whom he had resided in 1804,—long before she was born. On entering the room, Humboldt exclaimed, without the slightest doubt or hesitation,—“You must be the daughter of my old friend in Philadelphia.”—F. A. SCHWARZENBERG.