# SCHOOL OF THOUGHT : GERMAN

## Contribution of Alexander von Humboldt

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## Founders of modern geographical thought

After the great age of discovery, two leading German scholars, viz., Alexander von Humboldt and Carl Ritter made valuable contribution to the fields of basic sciences, humanities and arts. The foundation of geography as a modern science was primarily laid by German scholars during the period from 1750 to 1850. The second half of this period, the time of Humboldt and Ritter, is known as the ‘classical period of geography’. Humboldt laid the foundation of plant geography and declared geography as a descriptive science, while Ritter is credited with introducing mankind into geographical studies – particularly humanity in relation to environment. He also opined that ‘ geography is not concerned with the individual plants but rather with the plant and animal cover'. These two scholars are regarded as the founders of modern geography although neither was trained as a geographer.

## Alexander von Humboldt

Alexander von Humboldt led the way in the expansion of geography in and outside of Germany. He was a scholar of great versatility, who contributed appreciably to the fields of geology, botany, zoology, physics, chemistry, history, climatology, geomorphology and to all other branches of geography. He travelled about 4000 miles and in all his travels, however short, he made multitudinous observations. He performed all journeys with telescopes, sextant, cynometers and barometers. With the help of these instruments, he measured accurately the temperature of air and ground, pressure, winds, latitudes, longitudes, elevations above the sea level, magnetic vibration, nature of rocks, types of plants in relation to climate, latitude, altitude and human attitude.

Humboldt was born in an aristocratic family in prussia. After getting education in classical languages, economics, finance, history, technology and mathematics, Humboldt started his career in the army, but his mother prevailed upon him to study economics and to complete in the civil service examination. His interest in geography started with his acquaintance with George Foster – who was on cook's second voyage around the world. He became keenly interested in the rock structure of the Alps and visited Bavaria, Austria, Switzerland and Italy. He learned the art of handling various instruments of measurement like sextant, barometer.

## Adventures and Explorations

Humboldt had a gift for exceptionally sharp observation and in fieldwork he was unsurpassed. In Madrid, he made daily observations of temperatures and altitudes.

From Madrid, Humboldt and Bonpland reached Cumana port in Venezuela. Along the sea coast they went to Caracas and explored the Valencia lake. He noticed that the Valencia lake has shrunk and fields for cultivation of crops had been developed on its flat banks. He attributed the shrinkage of the lake to deforestation of the neighbouring lands. He established a positive relationship between the forests and rainfall. The idea that more forests mean more rainfall still significantly persists.

Humboldt's expedition explored the Orinoco river and its tributaries and established the truth of its connection with Amazon. He did measurements and established exact latitudes and longitudes of places.

Humboldt and Bonpland arrived at Cartgona and from this port they went to Andes, Ecuador and Peru. Humboldt gave a scientific explanation of crops and the influence of altitude, temperature and vegetation on crops.

Traversing the Andes southward, the explorers reached Lima. On the coast of Peru, guana bird droppings were observed which gave great manural value. The cold water current of Peru was also observed and recorded for the first time. The temperature and velocity of this current were measured. This cold water current was subsequently named as Humboldt current.

In 1806, he made a visit to Vesuvius volcano. After its completion he wrote his experiences and observations in 30 volumes in French, which were subsequently translated into a number of foreign languages. He visited the city of St. Petersburg where he was entrusted with the task of exploring the virgin lands of Siberia across the Ural mountains. Throughout the Siberian expedition, a regular record of temperature and pressure was kept. On the basis of these observations, it was inferred that temperature on the same latitudes varies moving inward from the coast. The concept of *continentality* was also established by Humboldt. Moreover, the term ‘permafrost’ was coined to explain the frozen characteristics of the Siberian soils. It was after this venture that the word 'climatology’ appeared in geographical literature which deals with variations of atmosphere, temperature, humidity, barometric pressure, winds, atmospheric purity and the degree of visibility. His major concern was to correlate the physical environment with the human and organic phenomena. While dealing with man- nature interaction, he included man and his works but did not give adequate weight to man as the major determinant. He attempted to develop a general picture on the distribution of average temperatures in the world in relation to the distribution of continents and oceans.

Alexander von Humboldt thought an approach to

science was needed that could account for the harmony of nature among the diversity of physical world. For Humboldt ‘the unity of nature' meant that it was the interrelation of all physical sciences- such as cojoining between biology, meteorology and geology. He viewed nature historically, and tried to explain natural phenomena without the appeal to religious dogma.

In 1845, Humboldt’s monumental work *Kosmos* was published, and was well received all over the world. It was later on translated in a number of foreign languages. Kosmos, a comprehensive account of the travels and expeditions of Humboldt, was written with the following four objectives :

1. The first is the definition and limitations of physical description of the world as a special and separate branch of knowledge.
2. The second is the objective content, which is the actual and empirical aspect of nature’s entity In the scientific form of a portrait of nature.
3. The action of nature on the imaginative faculty and emotion becomes an incentive to nature studies through the means of travel, description, poetry, landscape, painting and display of contrasting groups of exotic plants
4. The history of natural philosophy and the gradual concept pertaining to cosmos as an organic unit are

dealt with.

In brief, Humboldt's objective in writing *Kosmos* was to develop a universal science. Religions, he insisted, offer three different things to mankind: a lofty moral idealism, which is common to all religions; a geological dream regarding the origin of the earth; and a legend concerning the origins of the religion.

He planned to write a series of books about the world with the following objective: give a scientifically accurate picture of the structure of the universe. He saw nature as a whole and man as a part of nature. Humboldt believed that all races of man had a common origin and that no race is necessarily inferior to the others.

So far as the subject matter of *Kosmos* is concerned, in the first volume there is a general presentation of the whole picture of the universe. The second volume starts with a discussion of the portrayal of nature through the ages by landscape painters and then continues with a history of man's effort to discover and describe the earth since the time of ancient Egyptians.

While dealing with the subject matter of geography, Humboldt coined the term 'Cosmography' and divided it into Uranography and geography. In his opinion, Uranography is the descriptive astronomy which deals with celestial bodies. Geography, on the other hand, was confined to physical geography which deals with

the terrestrial part. Geography, according to him, is the description of the earth which deals with interrelationship of phenomena that exist together in an area.

He considered nature as an organic whole born out of harmonious interrelationship between all living and non- living objects existing together in particular territories. The foundation of universal science was the main objective of his *kosmos.* He focused on geography as the discipline concerned with both inorganic as well as organic phenomena on the earth’s surface as an interrelated entity. He was the pioneer of the concept that ‘man everywhere becomes most essentially associated with terrestrial life'.

He gave importance to geographical representation of data on maps and the utility of maps for geographical studies.

Humboldt believed that all the races of man had a common origin and that no race is superior or inferior to others. Moreover, he stressed the need of casual observations of nature in the field and of careful measurement of observations. It was an approach towards theory building and model – making.

Humboldt concentrated largely, though not exclusively, on physical features, climate and vegetation. About the use of ‘natural', he was the follower of Kant. The word ‘natural' in its broadest sense included all the phenomena observed outside the observer's mind or

the objective reality. It is because of these contribution that he is considered not only the founder of plant geography and climatology but also modern geography. Humboldt thus was the last master of universal science.

Humboldt made substantive contribution to systematic geography and laid stress on the unity of nature. Being an agnostic, he did not write a word of praise for the creator ( God).

REFERENCE

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