

B. Classical Phase (1800-1859)



Fig. 5.2 Alexander Von Humboldt (1769-1859)

The contributions of Alexander Von Humboldt and Carl Ritter were so great that they are jointly called the 'father of modern geography'. They worked as researchers and teachers of geography in Berlin. The pattern of their works on geography is considered the basic framework of the subject. Geographers of later years added to the foundation prepared by them. Geography as a separate discipline was established on the strength of their works. For this reason the period in which they worked is considered as the Classical Phase of geography. The details of their contributions are given hereunder.

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→ Contributions of Humboldt in Geography :

◆ **Travel : Direct observation for data collection:** Humboldt was the first man to begin the method of acquiring knowledge by direct observation and perception (survey) through measurements by travels in hills, mountains, rivers etc. For

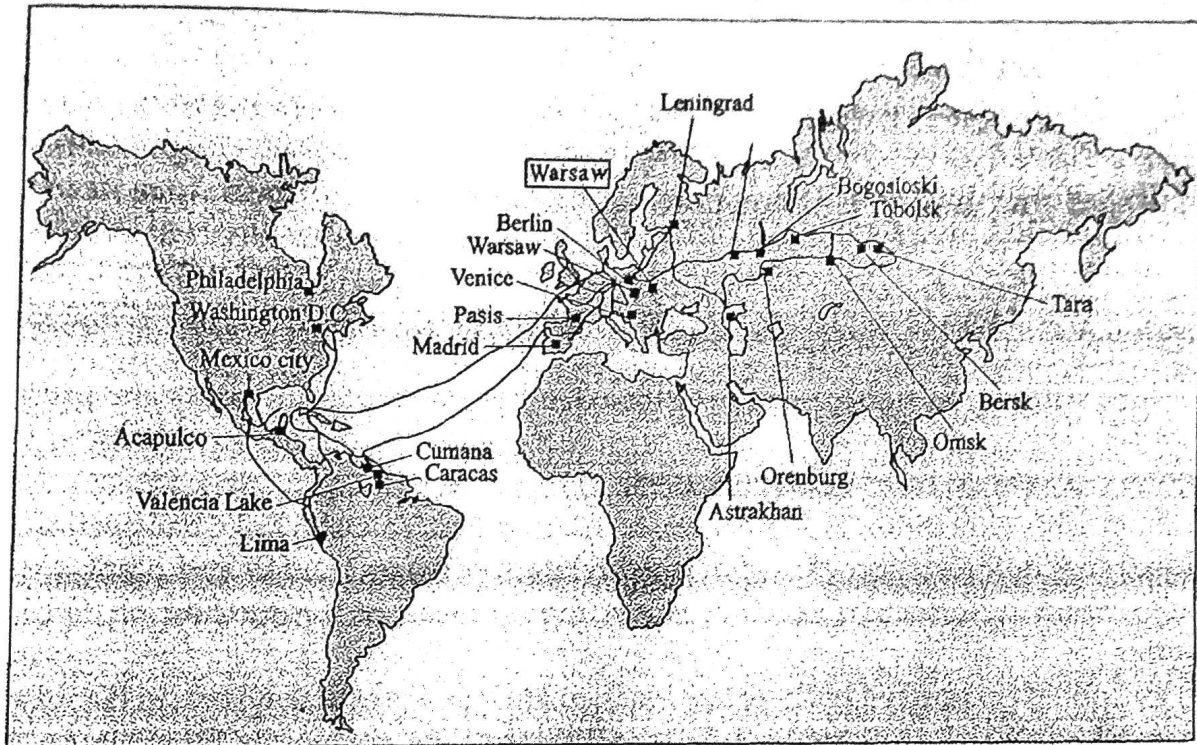


Fig. 5.3 Regions travelled by Humboldt (After Hussain, 1995)

the profound study of the rocks of the Alps, he travelled Austria, Switzerland and large areas of Italy. He travelled Mediterranean Sea, Mexico, Caribbean islands and east of Siberia. He covered almost forty thousand miles and has recorded the evidences of direct and intensive observations. He explored Orinoco basin in 1800, and understood its connection with the Amazon River. He also collected numbers of plant and rock specimen and brought to Cuba in November, 1800. In Cuba, he studied economy and society of Cuba. He travelled Columbia, Andes, Ecuador and Peru. He climbed Chimborazo Peak (6,326m) and established the relation between altitude and air pressure, influence of altitude on temperature and crops. He proposed a classic explanation of vertical zones of North Andes. The method of field survey initiated by him is followed by the students and researchers of geography even in present times. Thus geography has been emerged as a science of field observation.

◆ **Instruments for Collection of Geographic Information :** He used about 40 different types of instruments during his travels. These were used for monitoring and measurement of the elements of atmosphere and topography. He took steps for accurate data collection by using sextant, barometer, telescope, etc. and popularized the method. The method of empirical observation, adopted by Humboldt in three centuries ago has helped to establish Geography as a science based on precise data collection. During field survey students of geography even in present times use compass, leveling, theodolite, G.P.S, total station,

etc. for land survey and taking accurate measurements of different elements for map making.

◆ **Approaches for Geographical Study :**

(i) Humboldt initiated the **inductive method** of study in Geography. He travelled widely to collect data by direct observation. He acquired knowledge from the data collected and ultimately synthesized them to draw conclusions.

(ii) His **direct observation** in Northern Andes led to the construction of vertical zones; and helped in establishing relation between altitude and air pressure, altitude and temperature and altitude and crop.

(iii) His detailed investigation in different parts of Mexican territory led to establish impact of landforms on cultural landscape (Hussain, 1995). Direct observation and experience helped him to infer that "*prosperity of Mexicans are due to their better use of land resources*" (James & Martin, 1981).

(iv) During his expedition in Siberia, he took detail records of temperature and pressure. On the basis of his observation "*it has inferred that temperature on the same latitudes varies moving inward from the coast*" (Hussain, 1995).

(v) During his expedition at Venezuela, he noticed that Valencia Lake has been shrunk due to extreme deforestation. He established relation between rainfall and plant.

This method of inductive learning is just the opposite of the method of deductive reasoning.

(vi) Humboldt expressed **holistic approach** to analyse terrestrial system in Geography. He believed earth to be an organic whole. All things here are closely interrelated. Thus he defined the place of geography in the domain of knowledge and the attitude of a geographer. From this point of view he explained cosmography or the knowledge about the universe, which he divided into two :

- (i) *Uranography or astronomy* : It studies celestial phenomena.
- (ii) *Geography* : It studies terrestrial bodies.

◆ **Place of Geography as Earth Science in the Domain of Knowledge :** Kant and Humboldt made following classifications of knowledge :

- **Systematic Science** : It studies the natures or characteristics of different things; such as – Botany, Geology, Physics, Chemistry, etc.
- **Historical Science** : It studies the origin of things; as – History, Archeology, etc.
- **Earth Science** : It studies the distribution or organisation of things related to earth surface; as – Geography.

◆ **Land Survey for Data Collection, Mapping and Analysis :** Humboldt constructed maps by using data, collected through land survey. He prepared maps of areas extending from 10° north to 10° south, showing the distributions of altitudes or topography. He invented the concept of detecting temporal change based on maps prepared at different points of time. He made a new convention of studying the changes of topography, vegetation, crops, snowline, etc. of places with the help of data collected through direct observation. According to him, land survey enables not only in data collection, but a proper

analysis of them enables us to understand geographical interrelationships of different phenomena and spatial difference in distribution of those. Being invited by Russian Czar in 1829, he extensively surveyed Siberia. Russian Czar established a number of climatic stations in Russia. Detailed recording of atmospheric pressure and temperature were taken from those stations. Isotherms showing distribution of atmospheric temperature were prepared. First of such kinds, maps were prepared to show spatial distribution of phenomena. Thus a systematic method of analysis and a method of teaching-learning of geography were initiated.

◆ **Systematic and Regional Approaches** : Humboldt emphasized the importance of the analysis and generalization of the distribution of data collected world-wide as well as regionally. He was in favour of study of an area, considered as a unit, on the basis of interaction of different geographical phenomena. As a result, separate landscapes and regional characters are developed through the interaction between man and nature. He opines that the Russian Steppes, American Preire, Tundra Grass-Land have appeared as separate areas. He also said that a common character between these areas should be found, so that a **general theory** or a **model** can be prepared. In this way Humboldt synthesized systematic and regional approaches.

◆ **Cosmos—the Ordered World** : His famous book, "*Cosmos*" was published in 5 volumes from 1845-1862. Here he successfully expressed his conclusions drawn by synthesizing the analyses of different data collected throughout his life. He used chiefly inductive method to synthesize his analyses. Both systematic distribution and regional differences received equal importance in his book.

Apart from cosmos, he had written numbers of books on very specialised topics mainly in French those were translated afterwards. *Narratives of Travels to the Equinoctial Regions of the New Continent during the years 1799 – 1804*; *Political Essay on the kingdom of New Spain* etc. are important among them.

Humboldt's Contributions in Brief :

* (i) He initiated the method of direct survey through travelling and data collection through observation and established geography as a science of field survey. * (ii) Accurate measurement with proper instruments for the purpose of geographical data collection, which was the first step towards establishing geography as a true science. * (iii) The convention of map-making with the data collected through survey or observation. * (iv) Explanation of world-wide distribution of a phenomena by properly analysing the data collected gave rise to Systematic Geography. * (v) 'Region' or 'area' as a basic unit for study and the method for establishing regional differences gave rise to Regional Geography. * (vi) Inductive method of learning through direct observation, drawing conclusion from synthesis of data. * (vii) Established geography as an earth science whose objective is to establish 'unity of nature'.

Carl Ritter (1779-1859)

Carl Ritter was born in 1779. He studied history, geography, physics, chemistry, mining science, botany extensively and became a good scholar. He joined Frankfurt University as a professor of history in 1819. Later he joined Berlin University and in 1825 he was appointed as professor extraordinarius and worked in the same post up to the last

day of his life. He enriched geography by teaching and studying it for about forty years. He provided a solid foundation for the subject; so he is called the



Fig. 5.4 Carl Ritter

Father of Geography.

→ Ritter's Contribution to Geography :

◆ He established geography as study of earth as the home of man : In his discussions of geography, Carl Ritter emphasized the importance of human acts and deeds. He opined that geography is the earth science; it is a science of earth, the living place of man. Thus Ritter made the study and research of 'man centric geography'. He said that body is a fit container of soul; similarly, earth is a fit container for human beings. He says "Geography was a kind of physiology and comparative anatomy of the earth : rivers, mountains, glaciers etc. were so many distinct organs, each with its own appropriate functions; and as his

physical frame is the basis of the man, determinative to a large extent of his life, so the structure of each country is a leading element in the historic progress of the nation" (wikipedia, 2018)

◆ Initiation of Regional Approaches in Geography : Ritter divided the region of the world into different orders and initiated methods of making geographical studies on the basis of each region. Hierarchy of regions are (Rana, 2008) :

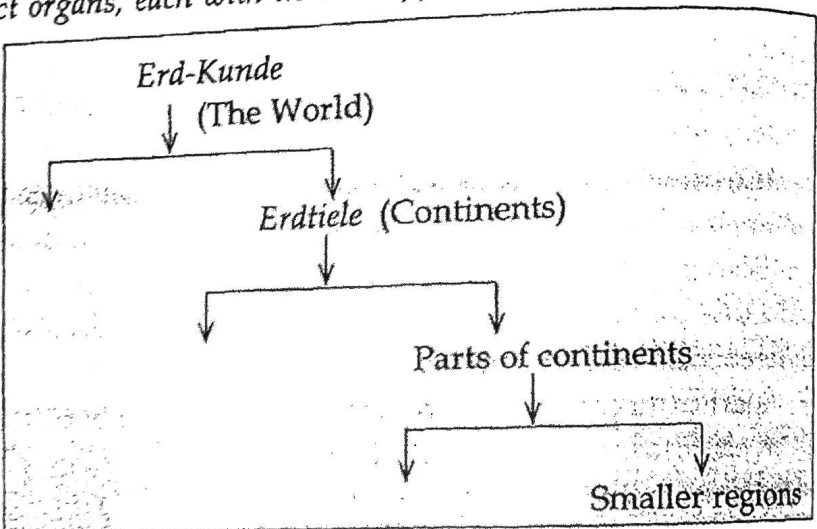


Fig. 5.5 Hierarchy of Regions

- (a) First Hierarchical order (Largest) - Erd-Kunde (The World)
- (b) Second Hierarchical order - Erdteile - Continents (Asia, Africa, Europe, America etc.)
- (c) Third Hierarchical order - Parts of continents, based on Relief or climate.
- (d) Fourth Hierarchical order - Smaller regional units based on regional differences.

His purpose was to establish regional difference through the synthesis of the interrelationship between man and nature. The concept of regional differentiation arose from it. On the basis of this, Ritter divided Africa, Europe and Asia into different regions and described them in details. For this synthesis, he mentioned the relationship among three kinds of geographical factors (Rana, 2008) :

- (a) Topographical factors, i.e. natural elements on earth surface; as topography, soil etc.
- (b) Formal factors, i.e. systematic or common characteristics of an area; as atmosphere, rivers, etc.

- (c) *Material factors*, i.e. geographical description of natural history which is related to distribution of population, location of minerals, distribution of plants and animals and their changes.

◆ **Concept of Regionalisation:** Ritter's concept of regionalisation is based on following principles.

- (a) From small to larger unit, a regional synthesis is made through the realisation of man and nature relationship.
- (b) These natural regions have no relationship with political regions.
- (c) In addition to natural boundaries marked by mountains or rivers, he gave importance to the marking of small regions on the basis of distribution of natural elements, such as – topography, vegetation, climate etc.

◆ **Interconnectedness and Interrelationship among Geographical Phenomena :** Natural and human phenomena together present the overall characteristic or uniqueness of a region by their interconnectedness and interrelationship within the regional limit. The interconnectedness and interrelationship among living and non-living phenomena in a regional unit attribute towards '*terrestrial unit*'. Ritter is the first geographer who proposed for study of interactions of different geographical phenomena in a regional unit. In his book "*Die-Erd-Kunde*" he clearly established interrelation between human history and natural phenomena. Ritter claimed that the central principle of geography is "*the relation of all phenomena and forms of nature to human race, examined and organised within the framework of the unique geographical association of land and man on the earth's surface.*" – Rana, 2008.

Before Ritter, Geography was considered the association of lifeless information. The learner of Geography was expected to know the names of countries, their capitals, rivers, lakes, valleys, etc. Ritter brought a change in this concept. He introduced the method of finding interconnectedness by harmonizing geographical facts.

In Ritter's view "The earth is a cosmic individual with a particular organisation, an *ens sui generis* with a progressive development : the exploration of this individuality of the earth is the task of geography" (wikipedia, 2018)

◆ **A real combination of both Determinism and Possibilism :** Many geographers consider Carl Ritter a determinist geographer. They claimed, while working on the interrelationship between man and nature, in most cases he has shown how human civilization is controlled by nature in a **deterministic outlook**.

But Ritter has actually spoken of the interrelationship between man and nature that is reciprocal – sometimes nature dominates on man's activity, again in some cases man dominates on nature.

According to Tatham (1967), Ritter's man-oriented geography clearly states : "*The earth and its inhabitants stand in the closest reciprocal relation and one cannot be truly presented in all its relationships without the other. History and geography must always remain inseparable. Land affects the inhabitants and inhabitants the land.*"

According to Adhikari (1992), "*it would be wrong to describe Ritter as a determinist as some commentators have in the past.*"

◆ **A region as a complete unit :** Ritter considered a continent as an organ or a complete unit. When he divides a continent into small parts, he does not consider them parts of

it but considers each of them an independent complete regional unit or member unit. These member units combine to build a continent. Every member unit forms independent unit with its own natural phenomena and human activities taken together.

◆ **Teleology** : To explain the uniqueness of earth and the cosmos, the uniqueness of man as a being, the distribution and the stretch of the oceans and continents he has used the concept of God. He believes that God is the creator of the universe and the systematic functioning of the universe is also created by the almighty. The mysteries which science cannot explain satisfactorily are called divine by Ritter. He proposes the concept of divinity to explain earth or the continents as complete and combined geographical units.

◆ **Empiricism and Inductive approach** : According to Ritter, geography is a science arisen from experience. He also thought that geographical explanation cannot be given on the basis of an established or inferential theory rather conclusions can be drawn step by step by collecting data on the basis of direct observation or experiment and analysis. Thus he has strengthened the foundation of inductive approach.

◆ **Die Erdkunde** : This famous book of Ritter was published in 1817. It was mainly a detailed description of Africa. In 1818, the second volume of the book containing Asia was published. They created a great sensation in the world of geographers and brought about a reformation in real sense. Ritter's main aim was to raise geography to the status of a comparative science from a mere document of descriptions. From 1832-1838, other six volumes and from 1838-1859, additional eleven volumes of this book were published. In 1939, Richard Hartshorne (1939) remarked that comparative geography has been presented in Ritter's 'Die Erdkunde' with mastery. Here the history of human civilization is presented by establishing the interconnectedness between topography and human nature, thereby making comparison of areas possible.

Summary of Ritter's Contributions to Geography:

* Founder of human-centric geography. * Hierarchical ordinal arrangements of regions. Established region as a complete unit irrespective of its size, where both animate and inanimate constituents taken together. * Presentation of interconnectedness of geographical factors in a region as the basic lesson of geography. * Successful harmonization of determinism and possibilism. * Introduction of teleology in geographical explanation. * Established geography as an empirical science by synthesizing empirical observations and experiences - thus empiricism and inductive approach have been strengthened. * "Die Erdkunde" is perfect illustration of synthesis between empirical experiences and interrelationships among geographical phenomena.

Table 5.1 : Structure of *Erdkunde* (wikipedia, 2018)

Volumes	Years of publication	Contient
I	1822	Africa
II-VI	1818-1836	East-Asia
VII-XI	1837-1844	West-Asia
XII-XIII	1846-47	Arabia
XIV-XVII	1847-48	Sinai Penisula
XVIII-XIX	1850-52	Asia Minor

◆ **Other Publications** : Some of his books were published posthumously.

(i) *Geschichte der Erdkundwund der Entdeckungen* (1861)

(ii) *Allgemeine Erdkunde* (1862)

(iii) *Europa* (1863)

W.L. Gage had translated some of his books in English.

(i) *Comaparative Geography* (1865)

(ii) *The comparative geography of Palestine and the Sinaitic Peninsula* (1866).

→ **Complimentarity of Humboldt and Ritter** :

Geography is acknowledged a full-fledged science as a result of the methods of geographical research, teaching and learning, approaches and concepts introduced by Humboldt and Ritter. They were contemporary as well as complimentary to each other. They shared common points and had disagreements too. None of them fully represent the geographical concepts entirely, but together fully represent them.

The points of their complimentarity are as follows :

1. Humboldt is mainly a supporter of systematic geography, which proposes the description of the worldwide distribution of geographical facts and phenomena. But Ritter is a supporter of comparative study of individual regions – “examined and organised within the framework of the unique geographical association of land and man on the earth’s surface” in a regional unit.
2. Humboldt emphasizes the importance of natural environment in his study of geography. But Ritter emphasizes the importance of man in his study. He considers earth as the home of mankind and his study of geography is human-centric.
3. Humboldt is a deterministic to a great extent but Ritter is a possibilistic although he agrees nature’s dominance in some cases.
4. Humboldt chiefly depends on science, while Ritter depends upon God. Humboldt is in favour of scientific analysis of all facts.

Thus a combination of systematic approach and regional approach make up the overall method of study and learning of Geography. A satisfactory synthesis of possibilism and determinism has enabled the complete presentation of man and nature relationship. Equal emphasis is given to both man and nature when Humboldt and Ritter are combined and a balanced study of geography is made possible. These two legendary geographers passed away in 1859 and in the same year the publication of Darwin’s epoch-making book “*On the Origin of Species*” created a great sensation. The definition, scope and content of geography are precisely presented in the “*Cosmos*” and the “*Die Erdkunde*” and thus Geography is based on a firm foundation. Geography entered into professional stage and established as a separate discipline.