

Definition of equator.

equator is a line that divided two parts north and south
4/11/0 ✓

Sir
Amaz Riaz

GEOGRAPHY THROUGH THE AGES

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A perspective on the history of any field of learning is essential to proper understanding of the nature and scope of that field. This statement cannot be better elucidated than in the following words of Wooldridge, the noted British geographer :

"The University teacher of any subject must necessarily and properly require of himself some measure of continuity and direction in his teaching and research which may give coherence to the whole."

• Geography cannot be an exception. It is oldest of all the sciences and contains the largest single body of factual information. It is claimed to be 'mother of sciences' and indeed geographers make use of materials and methods of almost all other physical and social sciences. No other science provides a more graphic record of man's quest for knowledge and his attempts to gain control of his environment than geography. The history of geography as a matter of fact forms an integral part of the history of human race and its civilization. Thus the study of the subject in its historical retrospect, and a knowledge of its methodological and conceptual development acquire a special significance. ✓

This is all the more important in our country when we realize that here geography still remains relatively less understood and less developed. For us it is more than necessary that we keep constantly looking backward and forward. Looking backward will help us to determine the degree and rate of our progress and the correctness of our direction. Looking forward will enable us to visualize the possible trends in the development of geographical knowledge.

I have, therefore, taken upon myself to present in this address a picture of the historical development of the geographic thought and also show as to how from the very beginning of human history, geography has played a significant role in revealing the world of nature.

Presidential address delivered at the First All Pakistan Geography Conference Karachi, January, 1944.

and extending the bounds of knowledge in various phases of human society and the way has served as a background for determining the policies for national planning and government. ✓

In an attempt to provide a meaningful perspective, the entire course of history has been divided into ages and periods. Each division implies some distinctive character and development of geographical thought.

ANCIENT GEOGRAPHY

✓ Man's curiosity about things around him is inborn. He must, therefore, have begun gathering facts about places from the very beginning of civilization. Each of the most ancient civilizations which grew up on the plains of the Euphrates and Tigris, the Nile, the Indus, the Ganges and the Hwang formed a centre whence the neighbouring lands were explored to a certain extent. However, these civilizations were local in character and commercial relations, the precursors of geographical knowledge were practically unknown.

The shores of the Mediterranean with the main cradles of mankind in and around it to which we can trace the beginnings of commerce, are the natural starting point in our enquiry.

✓ The people who are considered to be the first depositories of geographical knowledge were the Phoenicians who lived in Syria, on the high-way between Babylonia and Egypt. They had a remarkable aptitude for maritime enterprise and were great leaders in geographical exploration. They were great traders, navigators and colonisers. They founded many trading stations beginning at about 1200 B. C. Their greatest colony was Carthage. They, however, kept all the geographical information obtained by them as secret and almost the whole of it is lost to us.)

It is in the Greeks that we find the first geographers whose works have been handed down to us providing a bedrock foundation of geographical knowledge. The Romans followed them.

The Greek Period : *Speculation and Measurement*

✓ *Information and knowledge*

✓ The Greeks, who succeeded the Phoenicians, made a material contribution to the growth of geographical knowledge and are thus considered to be the pioneers of geography. ✓ Theirs was a golden age of geography as that of philosophy. ✓ The foundations of geography were well and truly laid by them. Unlike the Phoenicians, the Greeks allowed the observations made during the military campaigns and the knowledge gained through the spread of trade and colonies freely to disseminate. ✓ The Homeric poems give some idea of the geographical knowledge of the lands bordering the Aegaen sea and beyond it. ✓

Greeks excelled in speculations and measurements. The early Greeks viewed the world as a flat circular disc divided by the Mediterranean into two parts, Asia and Europe. A great ocean river ran around the circumference connecting the sea.

The term 'Geography' itself was used for the first time by the Greeks (Aristotle or Eratosthenes), meaning all aspects dealing with the description of the earth. The first geographical theories to affect the western world were those evolved or at least first expressed by the Greeks, and most of the main branches of geography were established by them.

In this early period Miletus in Greece became the chief centre of geographical enquiry; and the philosophers of the Ionian School, of which that city was the head-quarters, availed themselves of the knowledge thus obtained to aid their speculations on the shape, size and nature of the earth.

Before Christ

Thales of Miletus (640-540 B.C.) is regarded as the founder of Greek physical science and philosophy. He is claimed by some as the first exponent of the idea of a spherical earth; but by others it is said that he regarded the earth as floating on water, the movement of which was the cause of earthquakes. He also knew how to forecast eclipses.

His disciple, Anaximander (580 B.C.) of Miletus, put forward the theory that the earth had the figure of a solid body hanging freely in the midst of the universe. He thought that the world was round and not flat. He also introduced a primitive kind of sun-dial. He was the author of one of the most important steps in geographical science by being the first person to draw a map of the earth's surface with the boundaries of the countries and the leading features upon it.

Pythagoras (b. 582 B.C.) and his immediate followers were the first to introduce a general philosophy somewhat more approaching the truth. According to the Pythagorean system, as explained by Aristotle (ascribed by some to Philolous b. 480 B. C. and follower of Pythagoras), the earth was a sphere which was not situated in the centre of the universe, but common with the sun, moon and planets and the fixed stars, it revolved around a centre fire which occupied the middle point of the whole system. According to another version, Pythagoras believed that the earth was round and fixed at the centre of the universe with the stars and planets moving round it. The Pythagoreans were also the originators of the idea of the rotation of the earth.

Hecataeus of Miletus who lived about 500 B. C. is considered by Tozer as the father of geography. His book entitled Periplus is the earliest known work on geography. It is a general survey of the inhabited world known at that time on a regional basis. In it we have the beginnings of regional geography.

Handwritten notes in Urdu script on the left margin, including the word 'میتلس' (Miletus) and 'پیتاغورس' (Pythagoras).

Handwritten Urdu signature or mark at the bottom right of the page.

BC Ad
Basics of ancient history

4
Herodotus (b. 484 B.C.) suggested the division of the sphere into parallel zones, climate, a torrid zone uninhabitable for heat, two frigid zones uninhabitable for cold and two intermediate temperate zones fit for human occupation.

Herodotus (484—425 B.C.), the father of history, was the greatest of the travellers of ancient times. Although he was primarily a historian, he had a full sense of the value of geographical setting, and in his writings of history was able to add considerable knowledge based on personal observation and enquiry to the geography of lands.

Democritus (470—360 B.C.), the Athenian philosopher, laid the foundations of physical geography when he blamed the sea for its influence upon men, making them unfriendly towards fellow citizens and neighbouring states. Ptolemy, an associate of Plato, taught the rotation of the earth on its axis, though still regarding it as the centre of the Universe.

Aristotle (384—322 B.C.), a pupil of Plato, had the distinction of founding scientific geography. He proved that the earth was a sphere by (i) the circular shadow thrown on the moon during an eclipse, (ii) the shifting of the horizon as one travelled and the appearance of new constellations or the disappearance of familiar stars as one travelled from north to south and (iii) the tendency of matter to fall together towards a common centre. He was also the first person to define the Torrid Zone by the Tropic and the North Temperate Zone by the Arctic Circle. He believed both the zones to be habitable. He gave great impetus to mathematical geography.

Aristotle was conversant with many facts of physical geography such as the formation of deltas, coastal erosion, earthquakes and volcanoes and to a certain extent the dependence of plants on physical surroundings. He formed a comprehensive theory on the variation of climate with latitude and season and was convinced of the necessity of the circulation of waters between the seas, oceans and rivers. Most of his opinions on mathematical geography are contained in his *Meteorology*.

Physical geography are contained in his *Meteorology*. Aristotle speculated on the differences in the character of races of mankind living in different climates and correlated the forms of communities with their situation on a sea-shore or in the neighbourhood of steep slopes serving as strongholds, the former favouring democracy and the latter monarchy. He thus introduced some basic concepts in human and political geography. In his *Politics* there are general reflections on the influence of strongly marked natural features and geographical position on the history of nations and of the world at large. This is the foundation of historical geography.

Alexander (356—323 B.C.), the greatest conqueror of all times, was also a great explorer. There was an extraordinary expansion in geographical knowledge as a result of his campaigns and expeditions. A large part of south, central, south-west Asia and the

explored. These expeditions were of the greatest importance both in general and regional geography.

Theophrastus (371-287 B.C.), a pupil of Aristotle, carried on the master's work on meteorology, studied rocks and soils and wrote the 'History of Plants' dealing with the habitat of the different trees and shrubs. He examined the relation of plants to climates which marked the beginnings of Plant Geography.

✓ Eratosthenes (276-194 B.C.) determined the figure and dimensions of the earth, the longitude + latitude extent of the inhabited world or Oikoumene and the positions of chief parallels and meridians that intersected it. He paid special attention to reforming the map of the world as it had existed down to his time and to its reconstruction upon more scientific principles. For this great work he is justly called the father of systematic geography. Mathematical geography developed by Thales, Anaximander and Aristotle reached its zenith with Eratosthenes, and therefore he is sometimes called the founder of mathematical geography. He was the first who had attempted scientifically to determine the circumference of the earth. His geographical treatise has been divided into three books which deal with (i) the progress of the study of the subject to his age (ii) mathematical and physical geography and (iii) projection of his world map and descriptive geography, the last including topography and natural production of the countries and the races that inhabited them.

The Roman Period : Encyclopaedic and Chorographic Tradition S.M.M.

The Greeks actually established all the important branches of geography and were quite scientific in their work. The Greek period of natural philosophy was followed by the Roman period when the geographical thought was more dominated by the utilitarian spirit of the Romans than the philosophical spirit of the Greeks. The Romans were primarily concerned with commercial and administrative problems and plans for military conquest. The two most notable of them are Strabo and Ptolemy. (Strabo (64 B.C. - 20 A.D.) is a great figure in the history of geography. His Geography comprising seventeen books is a summary of the knowledge then existing, an encyclopaedia of information concerning the various countries of the inhabited world as known at the beginning of the Christian era.) It is a historical geography, and it is a philosophy of geography. Everywhere in his work he introduced the history of a country side by side with its geography. He illustrates the one by the other and tries to point out the intimate connection between the two. Besides this he is fond of tracing the influence of land on its inhabitants. The work also includes a fairly good treatment of mathematical, physical and some aspects of political geography. It will not be improper to quote his famous statement regarding geography, "Geography, in addition to its vast importance to social life and the art of government acquaints us with the occupants of the land and ocean and the vegetation, fruits, and peculiarities of each."

in which he discussed the geographical conclusion

He was Roman Geographica Book Name climatic conditions 17 countries

~~Longitude~~ ~~Latitude~~
Longitude latitude
Know world & MARK OR boundaries

Division of 17 volume

- 1st = From Herodotus till Strabo all invention explained
- 2nd = ~~Collection of sources from~~ ~~He explained~~
- 8 = European country He explained sources from which he collected some information
- 6 = Asian

ربطت
سنة

various quarters of the earth, a knowledge of which marks him who cultivates it as a man earnest in the great problem of life and happiness".

was born 90-168
Ptolemy (Claudius Ptolemaeus, 130-160 A. D.), the great geographer, astronomer, mathematician and cartographer of the Roman Empire lived about the middle of the 2nd century.

his great work in Almagest

As a geographer he was primarily concerned with mathematical geography and cartography. He wrote a book which is now known as the Almagest containing everything that was known about astronomy and trigonometry. He constructed 26 maps and a general map of the known world, which was one of the most important maps ever constructed. The 26 maps are in sections and are the first to be drawn with lines of latitude and longitude. The use of these terms appears first in his work. *he was very much agree*

سنة 915

His maps of Asia and Africa and his notes on latitude were collected in his *Book* Guide to Geography. These maps led Columbus to believe that he could reach India by sailing west across the Atlantic. The Guide exercised as great an influence on geographical progress as did his Almagest on astronomical. It was the most laudable attempt of the ancient world to place the study of geography on a scientific basis.

The general views of Ptolemy had much in common with those of Eratosthenes and Strabo. The ptolemaic system of the universe was based on the spherical form of the earth. But he believed that it was fixed in the centre of the universe with the sun, moon and planets circling round it in great hollow spheres called the heavens. This doctrine was paramount for more than fourteen centuries. In cartography he made a great advance on the work of his predecessors in his system of projections, which in many respects approximate to that of the present day.

As regards his concept of the world, he believed that there were lands to the south and east of Africa and to the north of Europe, all stretching far away beyond his ken. Perhaps, the most remarkable part of Ptolemy's geography is that which tells of the lands beyond the Ganges including the Malay Peninsula and China.

He agreed with Ptolemy

Ptolemy used the word (1) cosmography, to signify the description of the universe (2) geography, the description of the earth as a whole (3) chorography, the fuller description of a small region and (4) topography, the very detailed description of a smaller locality.

The work of Ptolemy was constantly referred to by Muslim geographers.

The earth is a surface
The Dark Ages : A Setback :

With Ptolemy the story of ancient geography comes to an end, for long after Ptolemy's time there was no addition to geographical knowledge. There gradually followed a period of time commonly called the 'Dark Ages', which was characterized by a negation.

Earth

of the spirit of enquiry, a dominating feature of the early centuries of the Christian era.) After the dismemberment of the Roman Empire during the 4th century, knowledge seemed to remain stationary and exact reasoning based on patient investigation was at a discount. Geography now by degrees passed into the hands of the theologians, and any view involving the least departure from the literal wording of the scriptures was regarded as heresy and punished with utmost severity. (Early Christian teaching deliberately avoided pre-Christian geographical theory.) The church dignitaries discouraged all scientific and philosophical enquiry. The theory of the sphericity of the earth, which was supposed to be in conflict with scriptures, was denounced as heretical. (Greek science gave place to primitive ignorance as shown in the monk's wheel maps.) The missionary replaced the traveller and the explorer, but he was indifferent to scientific investigation.

Although Christian pilgrimages to the Holy City of Jerusalem, where Christ had lived, gave rise to a considerable literature down to the 10th century, it is not of much geographical significance. The pilgrims and missionaries being absorbed in their visits to shrines brought back little information of any value,

GEOGRAPHY IN THE MIDDLE AGES

The 'Middle Ages' is defined here as that section of the history of geographic thought in which the Greek tradition of geographical knowledge was revived, tested and furthered to the frontiers of modern geography. The furtherance of knowledge did not take place only by extensive travels and exploration but also by systematic organization of geographical information. This 'age' began sometime in the 9th century A.D., when the muslims rekindled the light of scientific work which had given way to ignorance and bigotry during the Dark Ages, and extends upto the first half of the 18th century, when Kant showed his concern about the status of geography and advocated the inclusion of geography in the overall framework of scientific knowledge.

During these almost ten centuries of the expanse of the middle ages there appears to be three distinct types of works, each specifying a period of its own dominant characteristics. These periods may be termed as The Muslim Period, the European Renaissance and the period of Medieval-Modern Transition.

The Muslim Period : Travel Accounts and Gazetteer Writing :

Though geographical knowledge almost died out in Christendom, it was kept alive by the Arabs and other Muslim geographers. The geographical knowledge of the Greeks and the Romans passed to the Arabs who not only preserved it but also improved upon it in certain fields, adding new knowledge and new concepts of their own. In the words of Beazley, "No race has ever shown a greater keenness for the acquisition of knowledge or

more favour to the growth of science". Muslim interest in geography was stimulated for a variety of reasons. The chief was the universality of the Muslim empire which extended from the Atlantic ocean to the borders of the Pacific and for a considerable distance down the east coast of Africa. An excellent system of roads and desert routes, the yearly pilgrimage to the Holy City of Mecca, the great development of trade based on the diversity of regions within the empire, the high level of honesty of the Muslim traders and administrative needs of the empire, all contributed to the spread of geographical knowledge.

Apart from the pilgrimage, the zeal for the propagation of the religion of peace (Islam) and unwavering obedience to the teachings of the prophet, the behests of the Caliphs and the military campaigns undertaken, contributed to the growth of geography and other sciences. The Muslims recollect the tradition that "the ink of science was of more value than the blood of the martyrs" and obeyed the command of the prophet "to seek knowledge even in China". So it was that men such as Albiruni or Idrisi had a better knowledge and more adequate conception of the world in general than was possessed by a Christian before the 13th century. The works in historical geography of Albiruni, Albaladhuri and especially of Ibn-i-Khaldun reached new standards in accuracy of observation and in interpretation of the relation of the people to the land. Muslim geographers had started to formulate ideas concerning the uplift of mountains by folding and the erosion of slopes by running water and the great amount of time which these processes require.

It is significant to note that muslim geography did not develop until after the founding of the Abbasid dynasty (A.D. 766) when the caliphate was transferred from Damascus to Baghdad and Persian culture with its strong Greek imprint triumphed over Arabia. It was under the Caliph Almansur (753-775 A.D.) that geographical science began to take shape among the Arabs. Under the Caliph Almamun (died 833 A.D.), the successor of the Caliph Harun Al-Rashid in the earlier part of the 9th century, Arabian science reached its zenith. He created the first true school of geographical science which had been seen since the days of Antonines. The Almagest and Geography of Ptolemy and other works were translated into Arabic. An observatory was founded at Baghdad in 820 A.D., and attempts were made to determine the obliquity of the ecliptic. The circumference of the earth was recalculated, and the degrees were measured. Muhammad bin Musa-al-Khwarizmi compiled a system of the earth after the Ptolemaic pattern, a sort of index of place names, accompanied by its latitudes and longitudes. His works Shape of the Earth is of great importance.

In the earlier period the muslim geographers were mainly concerned with astronomical and mathematical geography. Their desert environment brilliantly lit stars and in clear nights helped in the guidance of their movements and the determination of their position. Their religion made accurate determination of latitude and longitude necessary for the

in his book system of earth he compiled different tables on latitude and longitude of different region

He also developed earth maps.

IBN-e-MAJID

He is great sailor instructor of travelling in Red Sea, China Sea, Persian gulf. He invented instrument of sea depth.
His book - KITAB-UL-FUJAYD

construction of sun-dials to indicate the afternoon prayer time and to secure the geographical co-ordinates of Mecca, towards which the face was turned in prayer.

The Muslims perfected the planispheric astrolabe which was used for reading heights of mountains and calculating latitudes and time, and from it was adapted in the 15th century the navigation astrolabe as used by Columbus.

The construction of maps and globes reached considerable efficiency during this period. But general cartography does not appear to have reached the same standard as geographical writing.

Works of the gazetteer type and description of travels were quite numerous. Travel by land or sea was a pleasant hobby of the Mussalmans, and this was partly due to the central position of Arabia in respect of the three known continents.

Excellent regional description and accounts were published of East, South, South-East, Central and South-West Asia, North and East Africa, Southern Europe and European Russia by various travellers, who are mostly crowded in the 9th and 10th centuries. Two of the leading Muslim travellers Ibn-i-Haukal and Ibn-i-Batuta travelled for about 30 years, and it is estimated that each covered an approximate distance of 75,000 miles.

One of the earliest works of this early muslim period is that of Ibn-i-Khurdadbih, the famous book on routes and Kingdoms (about 850 A. D.): It gives a summary of the main trade routes of Asia and a description of such distant areas as China, Korea and Japan. The beginning of his treatise gives a summary of his scientific views, which are those of a well educated disciple of Ptolemy. The earth, according to him, is round like a sphere and is placed in the midst of the celestial area like the yellow in an egg.

Another geographer of outstanding fame of the same period, Yaqubi (died 897 A.D.) sometimes called the father of Arab Geography, wrote a book resembling a modern gazetteer called *Kitab-al-Buldan* (book of countries) in 891 A.D. It gives details of numerous places and explains the physical and human geography of many areas. He was particularly interested in the statistical and topographical aspects. Al-Istakhri, Ibn-i-Haukal and Al-Masudi are three contemporary notable geographers of the 10th century. Istakhri wrote *Book of Climates* (about 977 A.D.) illustrated with maps. It forms the foundation of the "Book of Ways and Provinces" (988 A.D.) by Ibn-i-Haukal which gives a geographical description of the muslim countries, illustrating every region by a map. Al-Masudi, who had travelled over the Muslim World from Spain to China, is famous both as a historian and a geographer. He is one of the most versatile writers of the 10th century and is called the encyclopaedist of oriental geography of his age. His *Meadows of Gold* includes much geographical information. He has given his own map of the world. The size, shape, motion and main divisions

He also wrote a book on climate conditions of different countries in his book

AHMAD-Bin

Ahmad
He is also interested in Statistical and topographical Geography.

Al Balkhi

(i) He made a Atlas call *Kitabul Balkhi* 921

(ii) He tell different climatic region collect information from based on earth traveller.

(iii) Ibn-i-Haukal one of great travidos in muslim history He travelled almost 30 years different area of world

He wrote a book *Ways and Provinces* He gave the account different geographical feature of muslim countries and each region illustrate maps

AL Maqidi He was born 896 - 956 He is considered the historian of Arab. He traveled to Spain from China. He also traveled in Africa. He also discussed evaporation of water condensation of moisture indeed he talked about rain fall. He discussed of the earth are expounded in a way that even the modern science must recognize as not wholly inadequate.

Albiruni and Al-Idrisi are the two most eminent geographers of the 11th and 12th centuries. They are famous for their wide travels and descriptions. Both tried to make a fusion of ancient traditions and modern knowledge.

Albiruni (973-1048 A.D.) one of the greatest scientists and intellectuals of all times, holds a unique position amongst muslim scholars. He was a geographer, a historian, a geologist, an astronomer and a mathematician. He wrote numerous books and dissertations, of which a large number dealt with geographical matters, including measurement and determination of latitudes and longitudes, and finding distances and coordinates of many places, stereographic projection, roundity of the earth and its movement, natural springs, phenomena of tides, precious stones, geology, meteorology and climate. He gives a better idea of the inhabitable world than many of his predecessors and tries to establish interrelations between geographical factors and human affairs.

Al-Idrisi is perhaps the best known Muslim geographer in the west. He travelled widely in Europe, Africa and the Middle East. At the instance of King Roger II of Sicily he wrote a treatise 'Amusement for him who desires to travel round the world', also known as the Book of Roger. He also made a celestial sphere and presented the known world in the form of a disc.

The last of the celebrated Muslim geographers was Yakut (1179-1229), who compiled the famous dictionary of countries Mujam-al-Buldan, which describes in alphabetical order every town and place of which the author could obtain any information.

To the fourteenth century belong two famous Muslim travellers, Ibn-i-Batuta of Tangier (1304-1369) and Ibn-i-Khaldun of Tunis (1332-1406). Ibn-i-Batuta is the greatest of all Muslim explorers. He is known to have visited the lands of every Muslim ruler, apart from other countries such as Russia, Ceylon and China. He gives an able and accurate account of these countries. His work is mainly in social geography. Ibn-i-Khaldun is said to be the greatest historical thinker of Islam. His Universal History with its famous introduction (prolegomena) is a monumental work both in respect of history and geography. His remarkable correlation of environment and human activity in introduction has earned for him a very important place in human and social geography. He traces the effects of both climatic condition and local environment on the physical and mental qualities of different peoples. He studies the distinction between the arid country with nomadic life and cultivable country with settled life. Sprenger rightly said that Ibn-i-Khaldun not only wrote history with sound criticism and imagination but also combined ethnography and geography with it.

AL Maqidi He wrote about 'The Best of division for the knowledge of climate He has given himself collected

climatic data of Islamic countries - After that he divide the world 14 climatic region and he also prepared separate climatic map for every region. He developed the different projection to represent different

Albiruni He is a geographer, a historian, geologist, astronomer and mathematician. He wrote more than 146 Book - Out of 146 9 geodasi and 10 geography. He measured the radius of earth 6339 km and the actual 6354 km

Whole Kitab-ul-Mad Before we close the 10th chapter knowledge

12th
not

wrote topography of Ancient nature & Quinnal masudi
Kitab-ul-Hind - Age of 17 he measured Kath - He measured mountain
height and sea depth - He devised method of "projection of world
map"

Before we close the Muslim period, it seems proper to make a brief mention of the activities of the Vikings or the Norsemen for from about the middle of the 8th century to the 10th century at the same time when the Muslims were expanding the geographical knowledge in the east, they were attacking, exploring and settling in Western, Northern and Eastern Europe and Greenland. Stormy seas off Norway and Denmark favoured the development of ships more sea-worthy than those of the Mediterranean and their mode of life based on the fisheries of the sea rather than on agricultural resources, developed a great spirit of adventure. They were great traders and born explorers. They are credited with the discovery of North America which was accomplished without the aid of the compass. Late in the 9th century Iceland was colonized from Norway; and in 985 A.D. Eric the Red, sailing westward, discovered Greenland; and soon afterwards his son Leif Ericsson voyaged to America, the first European to reach there.

He also described the cause of natural spring
He also described about stream erosion
He also described about rotation and revolution of earth

The European Renaissance : Discoveries and the Revival of Geography

As the rise of the Muslim culture overlapped the dark age of Christianity so did its decline overlap the beginning of the Renaissance in European geography.

While the Renaissance had started in the 8th century with the renewed study of Greek, the Crusades in the eleventh century marked a turning point in the revival of geographical knowledge in Christian Europe. In the words of Beazley, "They were successful in kindling a spirit of patriotism, of practical religious fervour and of boundless enterprise, where-by our western world finally attained to the discovery, conquest, colonization or trade dominion of portions of the world. It was no less due to the new spirit breathed by the vigorous Norsemen into every Christian nation by their association".

IBN Khaldun
1332-1406
muhammad Thowar
Pages his work on
cultural geography
Al-Asabiya 1375
major work of history
(Study of civilization)
Geography

The power of the church was also enhanced along with the growth of the crusading spirit. Learning was therefore still inspired in and from the church almost exclusively.

Mainly on account of the crusades in Europe of the twelfth century, something approaching a revolution took place not only in political and material life, but also in intellectual pursuits. In particular its geographical outlook, its knowledge of the world, both practical and scientific had been widened and deepened. Amongst the branches of science none made greater progress than geography. Translations and adaptations of Arabic texts were made for the use of Latin Christians. Descriptive geography shows a remarkable improvement.

Book Ajrab ul Buldan Athar ul Bilad
Part 1
Part 2
Ibn-e-majid
He wrote sailing

In the thirteenth and fourteenth centuries a number of Europeans, many of them Christian missionaries and diplomats, journeyed to the east. These travellers were not only explorers of a high order but did excellent service also to anthropo-geography by careful observations of the manners and customs and by scientific classification of the chief

Abu Ali Sina 980 - 1036

His book was compiled of Almagist He describe the courses of different land form. He also point out about stream erosion. He observe that mountain rising passage of time.

IBN-E-Baluta 1304-1369

TRVILOR

15000 miles He travel europ middle east indian subcontinent Africa south east Asia china and japan He describe different climatic condition Book The kind of universe History and Hills journey different account of travelling, madder made of coral reef

In 1497 an Italian mariner in the employment of England named John Cabot sailed across the Atlantic to arrive off the northern coast of North America and thus laid the foundation for England's claim to the whole continent.

The geographical conception up to this century had made little advance on the philosophical speculation of Greeks. Though the view of the roundity of the earth thus came to be established in the 15th century, the Ptolemaic tradition continued to be generally accepted till it was replaced by the Copernicus system.

The discovery of America opened a new chapter in the history of exploration. The keenness of the rivalry of Portugal on the eastward passage and of Spain on the westward led to the rapid exploration of new areas and an almost desperate search for some way round America by the north or by the south. This culminated in the most splendid feat of Magellan, a Portuguese navigator in the service of Spain. His expedition circum-navigated the world through the strait in the south of South America named after him via the Philippines (where Magellan was killed) and round the Cape of Good Hope between 1519-1522, and thus it was finally proved that the earth was round.

Throughout the 16th and 17th centuries the merchant adventurers established their trading posts and colonies and planted the flags of their countries on almost every shores. In 1500 a Portuguese Commander named Cabral thus acquired Brazil for Portugal. In 1519 the Spaniard Cortez (1485-1547) led an expedition to Mexico, and in 1533 Pizarro (1470-1541) conquered Peru. The Spanish exploration won for Spain the southern portion of North America, all Central America and the greater part of South America. The Portuguese and Spaniards between them thus completed the rough map of Africa and the two Americas.

The other nations of Europe, the French, the English and the Dutch did not sit idle. They had their own plans for new discoveries. While also challenging the monopoly of the Portuguese and the Spaniards for eastern and western routes, they concentrated their activities on finding a new route to the east by a North-Easterly or North-Westerly passage. Great exploration was thus done in the northern latitudes during the 16th and 17th centuries by the French, the English and the Dutch.)

In 1534 the French navigator Jacques Cartier's (1491-1557) expedition in an attempt to find the north-west passage reached the mouth of the St. Lawrence and discovered the lower fertile valley of the river. In 1553 the English expedition of Willoughby and Chancellor, in search of North East passage, reached the White Sea leading to the discovery of Russia. In 1576 Sir Martin Frobisher undertook three voyages (1576-1578) westward to find the north-westward passage and in the last attempt discovered the Hudson strait in the north of Labrador. Others followed him.

Captain Cook =

Pass the bill the person with rewarded 20,000 pound if he invent such a watch that will lose less than 2 ment in a journey from england 2 westindies and then back 2 england.

He went to Spanish king and after him give some ship to his journey to india from west He give him 5 ship and he started his journey in 1519 from Spain and reach southern edge of north America and then reach philphine guam iceland situated near philpine and died 7 APRIL He completed his journey 13 July 1522 Juan Sebastian captian of ship

1521 died
APRIL 7
He started his journey
1519
Spain west side road to india
give 5 ship

3/15/23

Francis Drake (1541—1596), the great English Navigator, ^{and an} an embodiment of Elizabethan enterprise, circum-navigated the world via the strait of Magellan and round the cape of Good Hope between 1577 and 1588. Barents (d. 1597) was the most important Dutch navigator to search for a North East passage to Asia. In his three voyages (between 1595—1597) he went as far as Novaya Zemlya.

The English thought of another plan to reach Japan across the North Pole. Hudson undertook two voyages for the purpose, in 1607 and 1623, when he was cast adrift in the Hudson Bay.

Early in the 17th century Australia was discovered by Dutch enterprise when Janszoon of Amsterdam in 1605 struck the east of the gulf of Carpentaria in the north of Australia. In November 1642 Abel Tasman discovered Tasmania and in December sighted the west coast of the South Island of Newzealand. He also sailed round Australia.

(During the two centuries side by side with the great increase in knowledge of the world through extensive exploration, great progress was made in astronomical and mathematical geography and cartography.)

Early in the 16th century, a Polish astronomer N. Copernicus (1473—1543), in opposition to the geocentric system of Ptolemy, introduced the Solar system and put forward the theory that the earth rotates on its axis every 24 hours and revolves round the sun. He explained the alternation of day and night by the rotation of the earth.

Solar system & rotation Copernicus, theory with some alterations is the one that we use today. The alterations were brought about mainly by the combined work of Brahe (1546—1601), a Danish nobleman, and Kepler (1571—1630) a German. Brahe made more accurate observations of the movements of the planets than had ever been made before. From these observations Kepler worked out a new scheme which contained the three laws known after him about the movement of the planets. Kepler also found out that the moon causes the tides.

Galileo (1564—1642) invented the thermometer in 1607 and a telescope in 1609. In 1613 he published *Letters on the Solar Spots*, and in it he supported the Copernicus theory that the earth goes round the sun. Torricelli invented the barometer in 1643.

In the first half of the 16th century, Germany became the principal centre of development of both mathematical and descriptive geography. Purbach and his pupil Regiomontanus founded a school of cartography and collected many of the astronomical observations. Tables of latitude and longitude, maps and globes were prepared.

Peter Apian (b. 1495) and Sebastian Munster (1489—1552) are the two chief representatives of theoretical geography, the former in astronomical and mathematical geography and the latter in descriptive geography. Their writings held the field for a hundred

years. Deriving inspiration from Ptolemy, Apian, in addition to making maps and globes, published two standard works: *Astronomicon Caesarem*, an astronomical treatise, and *Cosmographicus Liber*, which deals with those aspects of geometry and astronomy which are essential to geography. He distinguished between the chorology of the Greeks as the description of a particular place and the geography of his time as the general description of the whole earth. The earth is divided into five zones as we do it today. Very short notes are given on each continent.

Munster's Cosmographia (p. 1544), following Strabo's method and tradition, was a standard work of reference, which dealt mainly with human and political geography on a regional basis. It is a descriptive book that followed the example of Strabo. He also made improvements in the art of Cartography. For the first time he made use of a small compass, the forerunner of the prismatic compass, in a triangulation survey. For about a century the chief centres of cartography and geography were in the Netherlands.

projection Mercator (1512—94), Ortelius and Blaeu were the great cartographers of Flanders and the Netherlands who developed and improved the art of cartography very much. Mercator, a student of Apian, found new devices and instruments for the drawing of maps. He established a geographical institute at Louvain where he worked out his famous cylindrical orthomorphic projection named after him. On it the famous planisphere map of the world for navigation was published in 1568.

Ortelius produced the famous world Atlas known as the *Theatre of the World* in 1570. However, as James has put it "not until the Philip Cluverius (1580—1623) and Bernhardus Varenius (Bernahard Varen 1622—50) wrote their monumental geographical treatises was the revival of geographic learning well started.

Introduction to Universal Geography by Cluverius, consisting of six books published posthumously in about 1626, was highly commended particularly in its regional description of the whole earth as it was known upto that time. It is distinguished from cosmography by dealing with the earth alone, not with the universe, and from chorography and topography by dealing with the whole earth, not with a country or a place. He is considered to be the founder of historical geography.

An even more important work in the development of geographic thought was the great treatise *Geographia Generalis* of Varenius published in 1650. Greatly impressed by the mathematical work of Copernicus, Kepler and Galileo, he defined geography "as that part of mixed mathematics which explains the state of the earth and of its parts, depending on quantity, viz., its figure, place, magnitude and motion, with the celestial appearances, etc." By some it is taken in too limited a sense for a bare description of the several countries and by

others too extensively, who along with such a description would have their political constitution. He divided the subject in two major divisions (i) General or Universal geography dealing with the earth as a whole and (ii) Special or particular geography dealing with each country in turn from the chorographical or topographical point of view. To Human Geography he reluctantly conceded a place in special geography as a concession to custom. While Cluverius set the standard for regional geography, Varenius did it for general geography. Nathaniel Carpenter, a fellow of the Exeter College, Oxford, was the first Englishman to write a scientific geography. In 1725 he published *Geography Delineated* in two books in which he regards cosmography, geography, chorography and topography as parts of a whole. He divides geography into two parts: spherical, or that for the study of which mathematics alone is required, and topical, or the description of the physical relations of parts of the earth's surface. He showed a remarkable degree of objectivity in his interpretation of observed phenomena.

In 1686 Edmund Halley produced the first wind chart and presented his theory of trade winds which related them to the distribution of heat on the earth.

Medieval—Modern Transition : *Quest for Reforms and Independent Status* 1750-1800

This period extends roughly from the middle of the eighteenth century to the early nineteenth century. The geographers during this period believed that the type of geography which developed during the preceding centuries could be anything but scientific in its objective. The inevitable outcome of this dissatisfaction was an attempt on the part of a small but active group of writers at reforming geography and thus raising it from the subordinate status to an independent science. The geographers now looked for a 'pure geography' (*reine-geographie*) and thereby laid emphasis on physical geography. The dominant idea was that the world should be studied in terms of natural divisions, which were regarded more real as compared to the political divisions used by former geographers.

Some of the important works summarizing a great deal of observed data concerning physical geography were presented by Philip Buache (1756), Torben Bergman (1766) and J. R. Foster (1783) in their various publications. Buache was the first person to make use of the contour lines. At the same time Jedidia Morse of U.S.A. published his compendium of geography (1789) and John Pinkerton, a British, wrote his *Modern Geography* in 1802. On the continent Conrad Malte-Brun began the publication of the *Geographie Universelle* in 1810. Other scientific writers in geography were J. B. de Lamarck, P. S. de Laplace, A. G. Verner, James Hutton, Charles Lyell, Georges Cuvier, William Smith and J.B. Blumenbach, to mention a few.

Gatterers publications in 1773—75 marked the beginning of a continuous effort toward reforming the subject. He was the first to present the idea of natural divisions, wh

was further clarified by him in 1805. His works had great influence on his contemporaries and on later students including Humboldt and Ritter.

The importance of Immanuel Kant's lectures on physical geography at the University of Königsberg cannot be exaggerated. He taught at this university for about 40 years (1756—1796). A great many students came in personal contact with him and got the benefit of his ideas, which were thus widely circulated. He paid great attention to collection and organization of materials from various sources and also dealt with a number of specific problems such as deflection of winds caused by the earth's rotation. In organizing his course Kant followed the outline of 'general geography' as laid down by Varenius a century ago. He considered physical geography as a summary of nature and a basis for history and all other geographies of which he enumerates five, (1) mathematical geography (concerned with the measurement of shape, size and movement of the earth and its place in the solar system), (2) moral geography (in the sense of mores, *i.e.*, an account of different customs and characteristics of mankind), (3) political geography (the study of areas according to their governmental organization), (4) commercial geography (dealing with trade in surplus products of countries) and (5) theological geography (the study of the distribution of religions).

Kant is also credited to be the first to advocate for the status of geography as an independent science. He argued that all knowledge gained by observation can be classified in two ways:

- (1) systematic classification, *i.e.*, classification in terms of species and genera regardless of their place of occurrence and
- (2) physical classification, *i.e.*, things perceived in terms of time and space.

Classification of things in terms of space provided geographical perspective, and thus he asserted that geography was an integral part of the overall framework of scientific knowledge. According to James, it is this concept of the place of geography among sciences that has guided the main stream of geographic thought since Kant.

The geography of this period included both systematic as well as regional geography. The inclusion of these two forms of study within a single field has evoked much controversy in the methodology of geography. But it is important here to note that this concept of geography introduced later in modern geography by Humboldt and Ritter emanates from Kant. It may, however, be of interest to know that the systematic studies during these years had gained major importance, which led geography to its scientific status. Physical geography, as treated by nearly all the writers of this period including Kant, Foster and later Humboldt, included not only the study of natural phenomena but also that of man. Hartshorne observes that Kant's physical geography, both in purpose and in content might be considered as

"anthropocentric," a point of view which Ritter inherited from Kant. For most geographers in this and the following period the concept of nature did not exclude man.

Hommeyer in 1810 may perhaps be considered to have introduced a definite trend toward a pure physical geography excluding the human aspect. He interpreted '*reine geographie*' as limited to the conditions of the terrain, concerned with climate and minerals. The organic life was left to '*Naturekunde*' '*Naturebeschreibung*' and '*Landerkunde*'.

Other concepts which were expressed during this period may be summarized as follows.

(1) That the character of different groups of people was related to the particular character of their environment. This concept was first expressed by Kant who considered Physical Geography to be a basis for social geography. He thought that the two were causally related. This concept gained so much support that later in the beginning of the 19th century the idea of the earth as an organism became quite acceptable, which included on the physical side inanimate and on the psychic side animate objects including man. However, as Hartshorne observes, 'it did not occur to any of the students of this period to consider these relationships as in themselves the direct object of geographic study'.

(2) As stated above, some of the writers of this period led by Gatterer, dissatisfied with the political divisions of the world, attempted to divide land in terms of natural conditions. But the increased knowledge of the earth's surface made this approach untenable. The impracticability of establishing natural regions was first shown by Ruhle von Lilienstern. Later Wilhelmi, Selten and Bucher showed that it was difficult to draw boundaries to establish natural divisions.

(3) Hommeyer introduced the concept of aesthetic geography and Lender expressed the idea that geography was concerned with 'where of things'.

With regard to the method of geographic study at the close of this period the emphasis was on two things, (i) inductive studies and (ii) mention of specific sources.

However, in spite of these developments in the methodology of geographic studies most of the writers of the period continued to set up *a priori* system of facts without testing them. What this period actually contributed was to prepare a stage for the development of modern geography. The science of pure geography of this period, in fact, contributed little toward accomplishing anything. *e*

MODERN GEOGRAPHY

The third and the most significant turning point in the history of geography was whence the ideas and demands as presented by the geographers in the 18th and early 19th

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century began to take concrete shape. This marks the beginning of the modern age in geography. For this we are greatly indebted to Alexander von Humboldt and Carl Ritter whose works which contributed so much to the development of academic geography are considered to be most standard 'classical'. The concepts advanced by them became the main stream of the geographic thought which has since governed the subsequent developments in the subject. Their works reformed geographical thought not only in Germany but their impact was also felt in other parts of the world especially through Reclus in France and later through Hartshorne and Sauer in America.

The development during this age has been so rapid and widespread that for a clearer understanding we must distinguish three periods—the classical period of Humboldt and Ritter, the post-classical half-century and the current period beginning from the first world war.

Classical Period : *Geography Reformed*

(The period during which Humboldt (1769—1859) and Ritter (1779—1859), the two founders of modern geography, worked is termed as the classical period in the history of geography.) It is interesting to note that these two scholars worked at the same time for thirty years in the same city, Berlin. Geography all over the world owes so much to them. (They were the first scholars to make effective use of the results of the works in systematic sciences.) However both differed in their training, background and approach.

By training Humboldt was not to become a geographer. In fact he started his education to be a diplomat and thus studied technology, economics, history and philology. However, he developed a passion for the study of nature. As a mine inspector he made some study of subterranean vegetation, and later his connection with George Foster played an additional role in stimulating his interest in geography. (His trips to Rhineland, England, Switzerland, Italy, South and Central America and Central Asia provided him with a large amount of accurate data. He utilized them to produce his outstanding work entitled, Kosmos.) (This book contains travel accounts and description of the physical geography of the earth.) However, it will be hardly true to say that his geographical works were entirely based on field observations. He did make use of other works including that of Ritter.

(Humboldt's contributions to the methodological problems in geography are of great importance. He laid a tradition of the systematic classification and comparative description of the observed phenomena.) This he was able to achieve with the help of his knowledge of physical and biological processes.

He developed methods of measuring and recording the phenomena he observed: He was the first to introduce 'isotherms' to show temperature differences on a map by measuring the temperature of different levels of the tropical mountains in America. He made

use of the Census data as well. (Thus Humboldt showed a way to quantitative-systematic description) which was a major advance over the qualitative-encyclopaedic description in geography.

Ritter possessed a different background. (He was ten years junior to Humboldt and benefitted a great deal from his works.) In the words of James "perhaps no man had broader background of preparation for geographic study than did Ritter". Before going to university he was educated in a school at Schnepfenthal where education was organized in accordance with the ideas of Rousseau and Pestalozzi, which insisted on acquiring knowledge of the world by direct observation of nature. Another contributory factor to the excellence of his training was the fact that during his school days he was under the personal care of J.C.F. Guts-Muth whose major interests were nature study and geography. Thus he developed a passion for geography right from the very school days. At university level he received training in natural sciences, history and theology. Unlike Humboldt he did not make long journeys and confined his observations to Europe only. Thus Ritter was well equipped with the observational method of nature study on the one hand and had interest in human problems (History) on the other. This helped him to do original geographical work. His meeting with Humboldt in 1807 provided him further stimulus. (He was impressed with Humboldt's idea that the earth's condition had an important relationship with man's life.) Consequently he decided to stick to geography rather than switch over to history which he was contemplating. However, his deep involvement with history and religion is reflected in many of his writings. After his death he was much criticised and accused that he made geography a handmaiden of history.

(Ritter was strongly in favour of comparative studies of different parts of the world) and was fully conscious of the weakness of the generalizations formulated on the basis of the knowledge of one area alone. (In his works he was concerned with showing how things occurring in an area existed together in mutual relationship.) (His publications between 1804—1807 regarding the geography of Europe were the first to bring Ritter into the lime light.) They created quite an impression on the geographers in Germany as well as France. (Later he made a plan to study the world by regions in a four-volume Erdkunde.) (He completed two volumes, the first on Africa and the other on Asia.) They earned him a great name in the academic world and Ritter received recognition, in Marthe's words, "without question as the reformer of geography, as the master who first made that field into science". He was appointed as a professor of history and geography at the gymnasium in Frankfurt. After a year he was given a double position in the Military College and in the University. Later in 1820 Ritter went to Berlin as the first university professor of Geography. Here he continued with his geographical work, Erdkunde, but in its latter volumes his historical bias became more and more pronounced.

Ritter gives us two important ideas concerning geographic method, which he had clearly stated from 1804 onward. The first thing which he emphasized was that geography should be an empirical science. (In his *Erdkunde* he wrote "The fundamental truth which should assure truth to the whole work is to proceed from observation to observation not from opinion or hypothesis to observation".) He was first to point out that Buache's idea of continuous mountain system and the assumed correspondence between the crest lines of mountains and the divide of drainage basins was contrary to the observed facts. (He was also the first to subdivide the continents on the criteria of surface features and thus to provide a framework to regional description.) (Secondly, his emphasis was mainly on particular places and the mutual relationship of the variety of phenomena occurring there.) Thus his approach was regional rather than systematic. (However, his regional method should not be confused and taken as dichotomous to systematic geography.)

From the works of both Humboldt and Ritter there emerged a new and unified concept of the nature of geography. Both were concerned with the significance of likeness and differences from place to place on the earth and both attempted to understand the meaning of association and interconnection among phenomena occurring at a particular place. They set a tradition of working out of door in geography and armchair geography was no longer acceptable.

Post-classical Half-Century : *Shifting Viewpoints*

While it is true that from the writings of Humboldt and Ritter there emerged a clear and unified concept of the nature of geography, it is interesting to note that their followers over-emphasized certain views. Thus during this period, extending roughly upto the first world war, we notice frequent shifts of emphasis from one view to another. The students of Ritter, especially Earnst Kaap, Arnold Guyor (the French-Swiss who was appointed to the first chair of geography in the United States of America at Princeton University) and Elesee Reclus of France, who earned the title of the "Ritter of France", laid exaggerated stress over the historical-regional approach. Systematic Studies were neglected. Consequently ambiguity over-lapped the geographic thinking. The academic status of geography fell in Germany and for several years after the death of Ritter there was no professor of geography in any German University.

However, the general scientific atmosphere of this period did not allow this confusion to continue longer. Under the leadership of Peschel the revival of systematic geography took place, which emphasized on the study of physical, non-human aspects. Peschel published a number of papers from 1866 onward. His emphasis was on the study of landforms, but he also attempted to study the influence of land-form on human history. He was followed by Richthofen and Penck in Germany and by William Morris Davis in

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America. These men were trained in geology and provided a better foundation to Peschel's geomorphological studies. Thus we see a new trend in geography. It began heading toward natural sciences. Human geography came to be considered in relation to geomorphology and thus was confined to regional studies. This resulted in another type of confusion. Two forms of dualism in geography arose. Not only the systematic and regional geographies were considered to be two separate things but also the physical and human geographies were regarded to be of two separate kinds.

344-1904 The leadership for providing a scientific and independent status to human geography goes to Friedrich Ratzel. He published Anthropo-geographie in two volumes. The first appeared in 1882 in which his main concern was to study the natural conditions of the earth in relation to human culture. But in the second volume, published in 1891, he changed his approach and argued against the concept of environmental determinism. He says "I could perhaps understand early New England without knowing the land, but never without knowing the Puritan immigrants". His followers not only overemphasized human geography, but some of them also misrepresented his views. Particularly his American pupil, Miss Ellen C. Semple interpreted and circulated his ideas in terms of environmental determinism which influenced the thinking of American and British geographers.

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✓ The chorological concept of geography was restored in Germany mainly due to the efforts of two scholars of this period: Marthe and Richthofen. Marthe (1877) defined geography "as the science of distribution" and advocated the recognition of casual relationships in small localities, which he considered to be a basis for the recognition of casual relationships in larger regions or over the world as a whole.

Richthofen in his inaugural address of Leipzig (1883) restored the chorological concept and stressed that this concept was indispensable to geography. (He also attempted to clarify the relation between systematic and regional geography.) He remarked that the difference between systematic and regional geography did not lie in the contents but in the method of study. Systematic geography leads to the understanding of causal relation of phenomena in area and provides principles that may be applied in the study of individual areas. This point of view conformed with that of Humboldt. ✓

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Alfred Hettner looked for a still better and fuller exposition of the nature of geography. He made a thorough study of all the previous works including that of Humboldt and Ritter and even went back to their predecessors in the pre-classical period. Hence his methodological statements came to be regarded as 'classics'. Never in the history of German geography has there been so much unity in the fundamental concepts as we find in the first part of the twentieth century. This was all due to Hettner. He maintained

• New social geographer. He was professor 1918-1935 in Heidelberg.

that the geographic researches should be conducted from the points of view of both systematic as well as regional. He did not recognize any fundamental difference in human and physical geography as well.

The impact of Hettner's methodological works was also felt on geographic thinking in other countries outside Germany. Among the geographers who were particularly influenced by Hettner's views may be included Berg in Russia, and his student Marcus in Estonia, Grano in Finland, Arstal in Norway, Helge Nelson in Sweden, Michotte in Belgium, Giannitrapani, Marinelli and Almagia in Italy, Chisholm and Herbertson in Great Britain, Inouye, Komaki and Watanuki in Japan. However, in general, geographers outside Germany have shown little interest in methodological problems.

In France although the first chair of geography was opened in 1809 at Sorbonne University and the Geographical Society at Paris was founded as early as 1821, yet during most of the nineteenth century the geographic writing followed the encyclopaedia tradition. At universities geography was afforded a subsidiary status particularly for the students of history. The 19-volume series (1875—94) published by Elesee Reclus, under the title of *Geographie Universelle*, was, no doubt, the most scholarly type of descriptive writing of that time. But it does not show any conceptual advance over the work of Ritter. e

It was due to the works of Vidal de la Balche (1845—1918) that geography in France was raised to higher standard. He was in fact the founder of modern scientific geography in France. He succeeded Himly to the chair of geography at Sorbonne in 1898 and in February 1899 he presented his epoch-making address outlining his programme. He advanced the concept of possibilism and discredited environmental determinism. According to his thesis the physical environment offered both possibilities and obstacles to man. What is more significant to note here is that Vidal introduced the chorological concept in French geography by emphasizing the regional method. He was fully conscious of the usefulness of comparative studies which led him to plan a series of *Geographie Universelle*.

Human geography was given excellent treatment by him and was raised to new level of achievements. His book Principles of Human Geography is regarded to be a masterpiece. His works made a profound impact on his followers. Jean Brunhes was his most zealous disciple. His book *Human Geography* is well known to French and English readers. It may be observed here that because of the dominating influence of Vidal on his followers a remarkable degree of agreement on the basic concepts and contents is found among the French geographers.

Although the American Geographical Society was founded in 1851, yet geography not achieve any academic status until Arnold Guyot, a student of Ritter, was appointed the chair of geography at Princeton University in 1854. He did not have any successor,

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however. The teaching and research in geography were greatly advanced by R. D. Salisbury, W. M. Davis and Miss Ellen C. Semple, who may be regarded as the chief American figures of this period. Salisbury was a geologist and started as a Professor of Geographic Geology at the University of Chicago. Later in 1903 at the same University he organized the first independent Department of Geography in America and remained the head of it for sixteen years. Davis, a follower of Peschel, was Professor of Geology at Harvard University. His interest in geographical work was so great that he organized the Association of American Geographers in 1904 and was elected its president thrice. Both Salisbury and Davis were mainly interested in the evolutionary processes of landforms. Both tried to develop geography in the words of Platt "into an explanatory evolutionary science of life in relation to physical environment".

Meanwhile Miss Semple, a student of Ratzel introduced the idea of human geography in America, which was based on the first volume of Ratzel's *Anthropogeographie*. She laid a tradition of explaining human activities in terms of Physical environment. Thus the concept of environmental determinism finds its most eloquent support in America as well. Although Semple also lived during the current period, yet her important works were published before the world war began.

Here again, because of the works of Davis and Semple which differed in approach and emphasis, we see the same form of dualism in physical and human geography as was developed in Germany. Semple's concept of environmental relationship gained more popularity and dominated the thought of a large number of geographers not only in America but also in other English speaking countries. This concept was, however, opposed by Fenneman in 1919 but was restated, more carefully though, 'as human ecology' by Barrows in 1923.

In Britain, as Buchanan observes "the revival of academic interest came relatively late". Royal Geographical Society was founded in 1831. The University teaching started in 1887 when Mackinder was appointed at Oxford. At Cambridge Yule Oldham was appointed in 1893. Later Alfred Herbertson joined as assistant to Mackinder at Oxford. However, except Mackinder and Herbertson, British geographers have shown little concern with the methodology of the subject. They have been greatly influenced by Semple's concept of environmental relationship and have derived very little from Germany. Nevertheless, a very important statement defining geography was made by H. R. Mill in 1903. He says ("Geography is the exact and organized knowledge of the distribution of phenomena on the surface of the earth, culminating in the explanation of the interaction of man with his terrestrial environment".) This is similar to the ideas of Marthe and indicates that the concept of 'areal differentiation' was not completely lost sight of in England.

Thus we see that toward the close of this period geography had attained independent status as a university subject in many countries. Its chorological concept had found firm anchorage in Hettner's methodological statements.

Current Geography : Specialisation *e*

After the World War I the development of the concept of geopolitics, as initiated by Karl Haushofer, marks another drift away from the main stream of geography which was set by Hettner. This concept was based on the ideas of a Swedish Political Scientist, Rudolf Kjellan, as expressed in his book *The Great Powers of the World*. Ideas of Mahan's supremacy of sea power and Mackinder's 'heartland' were also utilized by Haushofer. Together with Obst and Lantensach he founded *Zeitschrift für Geopolitik* in 1924 at Munich. His main objective was to justify the Nazi policy of expansion. Thus geopolitics became a cabalistic catch-word for the Nazis and to quote Morgenthau "degenerated into the political metaphysics couched in a pseudo-scientific jargon".

In the meantime scientific geography in Germany continued but under great financial handicap. Hettner himself was still active. Sapper, Otto Maull, Fritz Klute, Otto Schluter, Karl Dove, Heinrich Schmitthenner, Walther Penck, Alfred Wagner, Philipson, Carl Troll and others continued the scientific tradition of geography and maintained the concept of 'areal differentiation'. The German geography today is following the same line of thought.

Geography in France follows the views of Vidal de la Blache. The works of Brunhes, Albert Demangeon, Emmanuel de Martonne, Henry Bauling, Pierre Deffontaine, Jean Gottman and others which concentrated on regional studies of some area or the other are regarded of high quality, especially on methodological grounds. They maintain the basic chorological concept of geography. However, as Sauer suggests, it is the works in themselves that provided the development in regional method rather than studies in the nature of geography.

American Geographers have been more concerned in recent years with methodological problems than geographers anywhere else except in Germany. Isaiah Bowman, Derwent Whittlesey and Carl Sauer made the pioneering efforts in providing a fuller understanding of the nature of geography. Sauer's publications; entitled "Survey methods in Geography and its objectives" (1924), *The morphology of Landscape* (1925), "Recent Developments in Cultural Geography" (1927), "Cultural geography" (1931); set the tradition of the unified concept of geography which aimed at areal differentiation. He was particularly influenced by Schluter.

Richard Hartshorne's *Nature of Geography* (1937) came to be regarded as a 'bible' for the geographers in the English speaking countries. In this remarkable book he made a

critical examination of the development of geographic thought, drawing mainly upon the German works. He has been particularly influenced by Hettner. More recently Preston E. James and Clarence F. Jones have edited *American Geography: Inventory and Prospects*. It was prepared under the auspices of the Association of American Geographers in which more than hundred geographers participated. There are twenty six chapters in it, each has been written by a specialist in that field. Thus this book as James puts it "brought together the experience of half a century in the formation of the concept of geography and in the developments of acceptable procedures in geographic research."

The American Geographers today are developing highly sophisticated conceptual models of research. In recent years "Quantitative Techniques in Geography" is gaining importance. Almost all the principal universities have made 'Quantitative Techniques' as a required course for their post-graduate students. However, some universities, like Iowa State University, are over emphasizing it. This is a dangerous trend indeed, lest we should lose 'geo' and be left with 'graphy' only.

As noted earlier, British geographers have been little interested in the methodological discussions. The concept of environmental relationship as presented by Semple became the traditional line of geographic thought in Britain and in other countries with which Britain was associated as Imperial power. It is only recently that geographers have developed interests in understanding the nature of geography. Roxby's presidential address of 1930 was probably the first attempt amongst the British geographers to examine the concept of earlier German and French geographers. Later in 1933 R. E. Dickinson and O. J. R. Howarth published *The Making of Geography*. This was probably the first book which examined the nature of geography through ages. More recently S. W. Wooldridge, Gordon East, Dudley Stamp, Henry C. Darby including some other younger geographers have shown deeper interest in the methodological aspects of the subject. Under the directorship of Dudley Stamp, the British Land Utilization Survey was started in 1930 with almost similar objective as that of the Michigan Land Economic Survey (1920—30). In this survey, methods of detailed field study have been applied of which his monumental book '*The Land of Britain: Its Use and Misuse* (1937—41) is the result. Wooldridge and East published '*The spirit and Purpose of Geography in* 1950, and Wooldrige published his essays on the scope and nature of geography in *The Geographer as Scientist* in 1956. Darby has been interested in developing the methods for the study of historical geography.

Geography in the U.S.S.R. also has a long history. The Geographical Society of the U.S.S.R. was founded in 1845 under which from time to time various sections were organized to deal with different phenomena geographically. In the beginning the emphasis was on ethnology and cartography. It was after the 1917 Revolution that geographical work was greatly advanced. The first Soviet Geographical Congress was held in

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1933 at which N.N. Baranskiy made a case for the preparation of the 'Geography of U.S.S.R. region-by-region. In 1937 the project was taken over by the Institute of Geography of the Academy of Sciences of the U.S.S.R., but this plan could not make any headway until after the second world war when the work was resumed in 1946. Till 1957 eleven monographs had been published and works on other regions were in progress.

On methodological questions there appears to be some disagreement among geographers, but that does not dislodge the concept of areal variation as essential to any geographical work in the U.S.S.R. The Soviet geographers have done work of considerable importance in the fields of physical geography, economic geography, population and soil geography. On the basis of these studies, an adequate amount of factual material 'Characterizing similarities or differences in various phenomena has developed. As I.P. Gerasimov observes "on the basis of these facts and their explanation, comparison and generalization, the theory of geography has developed.

The university status of geography in this sub-continent of Indo-Pakistan is a post-World—War I development. Muslim University at Aligarh took the lead and established the department of Geography in 1924, offering courses to graduate and post-graduate students. It was followed by Madras and Calcutta and later by other universities in undivided India.

The University of the Punjab was the first to start the post-graduate classes at Lahore in 1944 in our part of the sub-continent. After independence outside Lahore geography departments for post-graduate teaching were established in all the other universities in Pakistan, viz., the Universities of Karachi, Sindh, Peshawar, Dacca and Rajshahi.

The Geography in this sub-continent has been greatly influenced by British geographers as most of us were trained at British universities specially London. There has been no serious attempt at rethinking about the scope and the content of the subject ever since it was introduced at Aligarh. However, we did make some efforts from time to time to promote its teaching and research at various universities in this country. The Pakistan Geographical Association was organized in 1948 and the East Pakistan Geographical Society was formed in 1956. The former has been publishing *Pakistan Geographical Review* since 1949 which began as *Punjab Geographical Review* in 1942. The latter started *Oriental Geography* since 1957. Both of these journals are widely circulated and are appreciated in and outside this country.

Recently Pakistan Institute of Geography which was founded in 1957 has been re-organized and has started publishing *Geografia*. The Karachi Geographical Society founded in 1947 has ceased to function and the publication of its Bulletin has also stopped. Karachi Geographers Association came into existence in 1958 in collaboration with which the Pakistan Geographical Association held the first all-Pakistan Geography conference in January 1964.

A trend toward modernizing the concept of geography is seen among the younger geographers of this country as well. The geographers have begun to emphasize field studies. Land Use survey of a small area forms an essential part of our post-graduate courses first introduced at the Punjab University and later at Dacca. Due consideration is being given to urban and cultural geographies and cartographic presentation. We have also started teaching "Quantitative Techniques" at the Punjab and Peshawar Universities. A National Atlas Board has recently been established to prepare a comprehensive Atlas dealing with Physical, Economic and Social aspects of the geography of the country.

The most striking feature of the current geography all over the world is its emphasis on specialization. Various phenomena of the earth's surface have been studied more deeply than others. Thus various branches of systematic geography have emerged some of which are more developed. Some of the more important are physical geography, cultural geography, economic geography, political geography, settlement geography, geography of transportation, urban geography, agriculture geography etc. Each of these branches has well developed objectives and concepts.

In an attempt to co-ordinate the works of geographers in various parts of the world, the International Geographical Union was organized in 1922 which meets every fourth year. Geographers from different countries of the world participate in its meetings and the proceedings are published. This is, however, not the first attempt. International meetings of geographers date back to 1871 when the geographers met at Antwerp (Belgium) for the first time under the auspices of *Congres International pour les Progres de Sciences Geographiques*. Subsequent meetings were held at London (1895), Geneva (1908) and Rome (1913). As the dates show these meetings were not held regularly until the I.G.U. was founded.)

CONCLUSIONS

Geography has grown from a simple speculative-descriptive field to a highly sophisticated-analytical science. Mathematical tradition of Ptolemy and Kant has been changed into cartographic techniques. The astronomical aspects of this fields have almost lapsed into insignificance. The descriptive tradition regarding various countries and regions as provided by Strabo and Munster is no longer considered to be acceptable. Modern regional geography begins with a central theme or problem around which all information is built up.

From time to time there have emerged various deviations in the concept of geograph like 'Geography as a science of distribution', 'geography as a science of relationship:

geography as a subject dealing with visible features of landscape', 'geography as geopolitics, and some others which were less important.

The essential nature of geography which has come to be recognized today is that it offers a point of view. Geography is concerned with those things which are unevenly distributed. It is concerned with the association of things that distinguish one area from the other. There is no dichotomy whatsoever in geography. As a research discipline geography can make more realistic contributions than others, particularly as a social science, because it is the only science which studies phenomena in the context of their place of occurrence.

In short, geography is no longer defined as a mere description of the earth or a study of the influence which the land exercises on its people. But as Hartshorne puts it "geography is concerned to provide accurate, orderly, and rational description and interpretation of the variable character of the earth's surface".

Thus geography is well entrenched in the idea of areal variation and presents a unified concept. The various branches of the subject that have developed are naturally the results of specialization.

REFERENCES

- Ackerman, Edward A., *Geography as a Fundamental Research Discipline*, Dept. of Geography, Chicago (1958).
- Ahmad Nafis, *Muslim Contribution to Geography*, Muhammad Ashraf, Lahore (1947).
- Beazley, Charles R., *Dawn of Modern Geography*, Henry Frowde, Vol. 1, 1897, Vol. 2, London (1901)
- Brunhes, Jean, *Human Geography*, Rand McNally, Chicago, (1920).
- Buchanan, R.O., *Geography and the Community*, Lecture delivered in the University of Hong Kong, May 21, 1957, Hong Kong University Press, Hong Kong (1958).
- Bunbury, E.H., *A History of Ancient Geography*, 2nd ed. Vols. I & II Dover Publications, New York, (1959.)
- Darby H.C., (editor), *An Historical Geography of England, Before A. D. 1800*, University Press, Cambridge (1951.)
- Dickinson, R. E. and Howarth, O. J. R., *The Making of Geography*, Clarendon Press, Oxford (1933.)
- Dohre, F.E. and Others, *Outside Readings in Geography*, Crowell, New York (1961.)
- Hartshorne, Richard, *The Nature of Geography*, Association of American Geographers, Lancaster (1939.)
- *Perspectives on the nature of Geography*, Rand McNally and Co., Chicago (1959.)
- Herbertson, A.J., The Major Natural Regions, *Geog. Journ* 25 (1905) pp. 300—312.
- Herbertson, A.J., The Higher Units : A Geographical Essay, *Scientia*, 14 (1913), pp203—212..
- Mooson, David J.M., Some Recent Developments in the Content and Theory of Soviet Geography *Annals of the Association of American Geographers* Vol. 49. (1959) pp. 73—82.

- Gerasimova, I.P., The Present Status and Aims of Soviet Geography, *Soviet Geography: Review and Translation* Vol. I (1960) pp. 3—15.
- James, Preston, E and Jones, Clarence F, *American Geography: Inventory and Prospect*, Syracuse University Press, Syracuse (1954).
- James, Preston, E, Geography, *Encyclopaedia Britannica* Reprint (1956).
- (editor) *New Viewpoints in Geography*, 29th Year-book of the National Council For Social Studies, Washington (1959).
- Kimble, G.H.T., *Geography in the Middle Ages*, Methuen, London (1938).
- Kravchanko, D.V., The work of the Institute of Geographers of the Academy of Sciences of the U.S.S.R. in 1957, *Soviet Geography: Review Translation*, Vol. I (1960) pp. 16—20.
- Mackinder, H.J., The Human Habitate, *Scot. Geog. Mag.*, 47 (1931) pp. 321—335.
- Mill, H.R., (editor), *International Geography*, Newnes, London (1903).
- Murzayev, E.H., Results and Aims of Physical Regional Geography in the USSR, *Soviet Geography: Review and Translation*. Vol. I (1960) pp. 21—27.
- Platt, Robert S. *Field Study in American Geography*, Deptt. of Geography, University of Chicago, Chicago (1960).
- Roxby Percy M., The Scope and Aims of Human Geography, *Scot., Geog. Mag.*, 46 (1930) pp. 276—289.
- Ryazantsev, S.N., The Results and Tasks of Studies in Regional Economic Geography at the Institute of Geography of the Academy of Sciences of the U.S.S.R., *Soviet Geograph: Review and Translation*, Vol. I (1960) pp. 33—39.
- Sauer, C.O., *Morphology of Landscape*, University of Calif, Publication in Geography, Berkeley (1925).
- "Recent Developments in Cultural Geography" Chap. 4 of *Recent Developments in the Social Sciences*, E.C. Hayes, ed. Philadelphia (1927) pp. 154—212.
- Cultural Geography, *Encycl. of Social Sciences*, 6 (1931) pp. 621—623.
- *Agricultural Origins and Dispersals* Am. Geog. Society, New York (1952).
- Semple, Ellen C., *Influences of Geographical Environment*, New York (1911).
- Stamp L.D., *The Land of Britain, its Use and Misuse*, 2nd Ed. London (1950).
- *Applied Geography*, Pelican (1960).
- Stamp, Josiah C, Geography and Economic Theory, *Geography*, 22 (1937) pp. 1—14.
- Taylor, Griffith (editor) *Geography in the Twentieth Century* 2nd ed. Methuen, London (1957).
- Tozer, H.F. *History of Ancient Geography* (2nd Ed.) Macmillan, London (1935).
- Vidal de la Blache, Paul, *Principles of Human Geography*, Constable, London (1926).
- Wright, J.K., *Geography in the Making: The American Geographical Society, 1851—1951*, American Geographical Society, New York (1952).
- Wooldridge S.W., and East W. G. *The Spirit and Purpose of Geography*, Hutchinson's University Library, London (1951).
- Wooldrige S.W., *The Geographer as Scientist, Essays on the scope and nature of Geography*, Thomas Nelson and Sons Ltd., London (1956).
- Zekkel, Ya D. On the Courses of Development and the Next Tasks of Geomorphology, *Soviet Geography: Review and Translation*, Vol. I (1960) pp. 28—32.