advocated the Crop Intensity Theory. Thus there was stress on landscape planning during the two wars. A peculiar trend during the period was attention of the German geographers focused towards the geo-politics. Houshofer in 1924, being inspired by the idea of R. Kjellen and Ratzel was convinced that state is a living organism which needs space to grow. Houshofer through his writings, probably influenced Nazi policies. With the defeat of Nazi in the Second World War In 1945, Houshofer was put on trial at Nuremburg. In 1946 he committed suicide.

After the Second World War, Germany was divided. There was political turmoil and socio-economic crisis. The universities and libraries were ruined. Within a short period of about fifteen years (1945-1960), Germans again emerged as a force in the field of geography. In 1947 a new geographical periodical entitled 'Erdkunde' appeared. The Germans started the study of landscape with the help of new and sophisticated statistical tools and techniques. Now there is more stress on variation from place to place as the function of latitude, altitude, distance from the sea and direction from the nearest coast. In the post-war period the new trend is that of 'cultural determinism' in place of environmental and physical determinisms. The new emphasis on culture is called 'social geography.' The Germans are now trying to interpret the landscape with the help of attitudes of people and their technical skill—that are parts of man's culture. Moreover, there is a trend towards integrated approach to study landscape in which scholars of physical and social sciences are being involved.

German geographers and cartographers made notable contributions in the art of map-making during the 19th and 20th century. For many years the von Sydow maps and atlases, with some wall maps, were widely used. The Perthes Firm published Stieler's Atlas, under the supervision of A.H. Pattermann. In 1845-47, Pattermann while working in W. & A.K. Johnston in Edinburgh, prepared the *Physical Atlas*.

The French School of Geography

The geographical ideas and concepts which were originated by Ratzel and his disciples, spread in the neighbouring countries. Alexander von Humboldt, who published his thirty volumes

while staying at Paris, created zeal in the French scholars. In the middle of the 19th century in France also geography was being taught by a historians, geologists, military persons and engineers. Even the chair of geography in the Sorbonne (Paris) was occupied by a historian who was attached to the Faculty of Letters. The major contribution made by French scholars is given in the following lines.

In 1752 Phillippe Buache was the first French scholar who criticised the method of representation of population, economic and other data in the administrative units. He advocated that the right approach for representation of geographical data is in the frame of natural region. According to him the river basin was the best kind of natural region.[27] Subsequently, Baron Coquebert (Director of French Statistical Office, 1796) proposed a division of the national territory into natural regions with a brief description of each of them. This effort created interest in regional divisions in France. But this approach was contradicted by Omalius d' Halloy in 1833 who prepared a geological map of France to establish the relation between landforms to the soils and underlying rocks.

In 1870-71 there occurred a major breakthrough in the expansion of geographical knowledge. Several geographical societies were established in the various universities of France, after 1871. The real take off in the field of geography in France was, however, started during the period of Vidal de Lablache.

Vidal de Lablache (1848-1918)

Vidal de Lablache is known as the founder of Human Geography. He was essentially a scholar of classical languages. His interest in geography developed in 1865 when he was studying archaeology at Athens. Later on Vidal taught geography at the University of Nancy from 1872 to 1877, and then joined Ecole as the professor of geography. In 1891 he founded a new professional periodical for the publication of best geographical writings. The periodical was called "*Annales de geographie.*" In 1894 Vidal published the first edition of the *Atlas Generale Vidal-Lablache.*[28] From 1896 to the time of his death (1918) he was the professor of geography at Sorbonne. During his career he devoted himself to the cause of geography, and

trained geography teachers for a period of about twenty-six years.

While delivering his first lecture at the Sorbonne University on 2nd February 1899, he stressed on the relationship between man and his immediate surroundings (milieu) by studying small homogeneous areas. In France such homogeneous areas are known as *pays*.[29]

Vidal was a strong opponent and critique of the environmental deterministic approach. He was influenced by the writings of Ratzel, and from his second volume of Anthropogeographie, Vidal formulated the concept of Possibilism. His basic approach towards the study of man and environment—the two major components of geographical study was that nature (milieu) sets limits and offered possibilities for human settlement, but the way man reacts or adjusts to these given conditions depends on his own traditional way of living.[30]

Vidal de Lablache published his book "Tableau de la Geographie de la France." It was a good addition in the literature of geography. In his work Vidal attempted a harmonious blending of physical and human features in the Tableau (France Plateau). He also tried a synthesis of *pays*. Vidal's book deals with the recognisable regional units of France one by one and shows that each *pays* has its own distinctive agriculture due to its soil and water supply, and also to the economic specialization made possible by the demands of the people of the towns. Far from reducing the individuality of each *pays*, modern trade had accentuated it by making their agriculture distinctive. Settlement showed a clear relationship to soil and water; for in some areas it was scattered and in others in the form of compact villages. Many of the *pays* had for generations been recognised as separate from, but complementary to their neighbours. These *pays* were, however, not homogeneous as in some there were local deposits such as limon over chalk which gave sharply contrasting soils reflected in difference in land use.[31] The Tableau is a deeply human work with a firm physical base. From this time, French geographers published a series of regional monographs.

Vidal de Lablache was opposed to the idea of drainage basin as a unit of study. While criticising the idea of taking drainage basin as the unit of study, he emphasised that such a

unit will create many complications in understanding the reality of a region. For example, the Central Massif of France is a well demarcated natural region *in toto*, but if it is divided into drainage basin-units, then the culture, institutions, traditions and attitudes of the people cannot be properly understood. About the method of geographical study he elaborated his idea that the basic objective of geography is to study the phenomena mutually interacting in a segment of the earth surface (pays).

In the opinion of Vidal de Lablache, the relatively small regions (pays) are the ideal units to study and to train geographers in the geographical studies. The tradition of micro-region study still persists in France. Many of the French geographers think of the regional geography as the best kind of Doctoral work. He was, however, of the opinion that regional studies at the meso and macro levels can be of practical utility which can help in the planning of areas. It was with this objective that he prepared a scheme to study the larger regions of the world—covering the whole world. This programme was partly carried out by Lucien Gallors after Vidal's death.[32]

Vidal's monumental work "Human Geography" was posthumously published in 1921 as he died suddenly in 1918. The partially completed work "Human Geography" was given the final shape by Emmanuel de Martonne—the son-in-law of Vidal de Lablache. In this book Vidal de Lablache started with aims and objectives of Human Geography; the Principle of Terrestrial Unity and the Concept of Man and Environment (milieu); Man as a Geographical Factor; the Patterns of Civilizations; Circulation (means of transport); Cultural Regions and Cities.[33] The chapter scheme of Vidal's book reveals the pattern on which he tried to examine the man-environment interrelationship.

Prior to Vidal, the Germans especially the followers of Ratzel were strongly adopting the deterministic approach for the study of man-nature interaction. Vidal had a clear insight in the weaknesses of deterministic arguments, realising the futility of setting man's natural surroundings in opposition to his social milieu and of regarding one as dominating the other. He considered it even less useful to tackle these relationships along systematic lines in the hope of discovering general laws governing the relationship between man and nature.

According to Lablache, it is unreasonable to draw boundaries between natural and cultural phenomena; they should be regarded as united and inseparable. In an area of human settlement, nature changes significantly because of the presence of man, and these changes are greatest where the level of material culture of the community is highest. The animal and plant life of France during the 19th century, for example, was quite different from what it would have been had the country not been inhabited by man for centuries. It becomes impossible to study the natural landscape as something separate from the cultural landscape. Each community adjusts to prevailing natural conditions in its own way, and the result of adjustment may reflect centuries of development. Each single small community, therefore, has characteristics which will not be found in other places, even in places where the natural conditions are practically the same. In the course of time, man and nature adapt to each other like a snail in its shell. In fact, the relationship between man and nature becomes so intimate that it is not possible to distinguish the influence of man on nature and that of nature on man.[34] The area over which an intimate relationship between man and nature has developed through centuries constitutes a region.[35] The study of such regions should be the task of a geographer. Vidal, therefore, argued for regional geography as the core of geography. According to Lablache:

> "Human societies, like those of plants and animal world, are composed of different elements subject to the influence of environment. No one knows what winds brought them together; but they are living together side by side in a region which has gradually put its stamp upon them. Some societies have long been part of the environment, but others are in process of formation, continuing to recruit numbers and to be modified day by day."

Societies have always begun to seek ways of satisfying their needs in the immediate vicinity. He believed that the population is a constantly changing phenomena. Mankind has in common with all other forms of life the tendency toward expansion. Man is a more adaptable and mobile organism on the face of the earth. He assured that the population did not spread

like a drop of oil; in the beginning it grew in clumps like corals.[36]

Vidal used the following illustration in order to underline the long association between the major factors governing the development of a community; while the surface of a shallow lake is being swept by a gust of wind, the water is disturbed and confused but after a few minutes the contours of the bottom of lake can clearly be seen again.[37] Similarly, war, epidemics and civil strife can interrupt the development of a region and bring chaos for a while, but when the crisis is over the fundamental developments reassert themselves.

Vidal's model fitted well in the agricultural societies of France and other western countries of Europe. During the medieval period, these societies were agrarian. After the Industrial Revolution the situation has changed in the developed countries and now in such societies 'cultural-determinism' seems to be more conspicuously dominant. Up to the industrial revolution, Vidal's approach was well suited in explaining the development of European agricultural landscape. In these parts of the world where industrialization is yet to take place, his hypothesis and approach of possibilism has great utility.[38]

After the Industrial Revolution in France the traditional physical setting was disturbed. The railway tracks, canals, roads and industrial complexes initiated the decline of the traditional local self-sufficient economy. Industry was developed on the basis of new cheap and rapid means of transport and large scale production for a wider market.[39] These developments reduced the value of the regional method as a growing number of areas.

In the later parts of his age, Vidal arrived at the result that with the industrial development the best in French life was vanishing. For future he suggested, we should study the economic interplay between a region and the city centre which dominates it rather than the interplay of natural and cultural elements.

As a result of Vidal's efforts, by 1921, there were sixteen departments of geography in France, one in each of the sixteen universities.[40] Interestingly enough, all the chairs of geography were occupied by the pupils of Vidal de Lablache. Thus geography in France owes much to Vidal, and he is rightly considered as the father of Human Geography who advocated and preached for 'Possibilism'.

Jean Brunhes

Born in 1869, Jean Brunhes was a disciple of Vidal de Lablache. After studying history and geography, he developed himself for the conceptual framework of human geography. On the lines of his master, he tried to identify the scope and method of human geography. His main work *Geographic Humaine: essai de Classification Positive* was published in 1910. He limited Human Geography[41] to: (1) Unproductive occupation of soil; (2) Things connected with the conquest of plant and animal worlds; (3) The destructive economy 'robber economy' or violent attack on nature which may result into poverty. Moreover, he stressed that these three sets of observable phenomena do not set the limit of geographical regions. Beyond these phenomena 'the geography of history' i.e. distribution of population;—production, transport exchange and political societies (territory, routes, frontiers, groups of states), social geography are also the important components of a geographical region. All these physical and cultural factors, therefore, need to be studied to make a comprehensive study of a region. In his approach of geographical study, he emphasised the two principles i.e. (i) The Principle of Activity; and (ii) The Principle of Interaction.[42]

The Principle of Activity

Jean Brunhes was of the opinion that the physical and cultural phenomena are in a state of perpetual change and they must be studied in the temporal change, instead of taking them as static in the time scale. He was of the opinion that 'everything is either growing or diminishing', 'expanding or shrinking' and nothing is 'stable and static.' For example, the heights of mountain peaks, the sea-level, the ice-sheets, glaciers, size of valleys, deltas, volcanoes, and forest are continuously changing in their shape, size and altitude. So in order to understand the interrelationship of physical and cultural components of a meso or micro unit the principle of activity is to be kept in mind to arrive at a just synthesis.

The Principle of inter-action

The idea of 'Principle of Interaction' Jean Brunhes borrowed from Vidal de Lablache, who advocated the 'Principle of

Terrestrial Whole'. Brunhes assumed that geographical phenomena (both physical and social) are closely interrelated with one another, and must be studied in all their numerous combinations or with permutations and combinations. The idea of the terrestrial whole or the terrestrial unity was the fundamental concept which later on inspired the 'regional synthesis'. All the physical and human forces are thus closely bound together because of the endless interrelations of the conditions they bring out.

In support of his 'Principle of Interaction' he examined the relationship between animals and cultivated plants, and determined with what forms of soil exploitation, with what kinds of cultivation and with what type of economic organisation, these animals are generally associated. In brief, 'our efforts are based fundamentally on the great geographical principle of interaction for man like plants and animals, and therefore, the concept of interaction should dominate every complete study of geographical facts. The force of physical nature are bound together in their consequences, in relations and in the consequence of these relations.'

Elisee Reclus (1830-1905)

Elisee Reclus was one of the disciples of Carl Ritter, who attended his lectures at Berlin in 1849-50. For corrupting the moral character of the people and his pupils he was expelled from France. During this period of his expulsion in 1851 he travelled and worked in England, in the United States of America, and in South America. He returned to France in 1856. He wrote two volumes of *La Terre* and the approach in these volumes is deterministic. Reclus was again condemned for anarchisn and was imprisoned, but this sentence was later converted to exile. During the years of his exile he lectured in Edinburgh and Brussels where he had an important influence on the development of geography in Belgium. He wrote nineteen volumes of *Nouvelle Geographie Universelle* which were published between 1876 and 1894.[43] The six volumes of *L'homme et la Terre* were published in 1905, the year of his death.

Reclus was a prolific writer. His style was lucid, detailed, systematic, and balanced. He documented his writings with

3,000 maps, giving a very accurate picture of the world societies. In his work *L'homme et la Terre* (The Earth and Its *Inhabitants*) he asserted that man is not the product of his environment but an important part of it; which can be appreciated from the following statement of Reclus:

> "Man may modify (his dwelling place) to suit his own purpose; he may overcome nature, as it were, and convert the energies of the earth into domesticated forces. 'One must seek the gradual changes in the historical importance of the configuration of the land' and in studying space 'we must take account another element of equal value—time'."[44]

Reclus was keenly interested in the conservation of nature and natural beauty. He was concerned with the destruction of the beauties of nature, and believed that man, in developing resources and building his works, should give grace and majesty to the scenery. But, Reclus said, through abuse of his powers 'the barbarian gives to the earth he lives an aspect of rough brutality', and in extreme cases 'where all grace and poetry have disappeared from the landscape, imagination dies out, the mind is impoverished, and a spirit of routine and servility takes possession of the soul'. Rural life is for these reasons preferable to the life of towns.[45]

Reclus pointed out that man has destroyed natural flora and wild animals and replaced them with his own cultivated crops and domesticated animals. He has changed the balance of nature, sometimes to his disadvantage, by introducing 'ruptures in the harmony of Nature.' What is needed is 'a robust education face to face with Nature' . . . This will give us the grandest development of the 'real love of nature'.[45] Thus Reclus discussed the man-nature inter-relationship in a very scientific way.

Emmanuel De Martonne (1873-1955)

The Vidalian approach which dominated the scene of French geographical writings in the late 19th and early 20th century, was vigorously pursued by his disciples and successors. Emmanuel de Martonne was a student and son-in-

law of Vidal de Lablache. De Martonne, from the beginning specialized in Physical Geography and his special area of concentration was Central Europe. He had a strong base of geology, geo-physics and biology. He studied the physical geography of Carpathians. His main interest was also in glacial erosion of Alps. In 1904 he met Willam Morris Davis in U.S.A. on the occasion of the Eighth International Geographical Congress and was much impressed by his work on geomorphology. The most popular works of Martonne were *Traite de Geographie Physique*, *La France Physique*. He inspired many French geographers to work in the field of physical geography.[46]

Albert Demangeon (1872-1940)

Albert Demangeon was also one of the outstanding students of Vidal de Lablache. He started his career as a school teacher and while teaching at Picady, he produced a monograph entitled "*La Picardie et les regions veisines.*" This dissertation was highly appreciated and he was appointed in the University of Lille where he remained until 1911.

Though Demangeon was a close friend of Martonne, he concentrated mainly in Human Geography. Demangeon devoted most of time to the editorship of *Annals*, and contributed to this journal 31 articles and 89 notes.[47]

Demangeon made valuable contributions in the spatial variations of farmsteads, which he pursued throughout his life. He wrote in transport geography, population and international economics. He also made a classification of lands and prepared land use maps. He advised his students to work on the major population groups of Far-East; the relations of White and Negroes; Irrigation in arid countries; and the growth of great cities.

Demangeon was a teacher of immense qualities and great vision. He was a modest person of polite nature. His contribution in the Vidalian tradition is widely acknowledged.

From the Vidalian tradition, geography was studied with new approach during the inter-war period. With the introduction of new tools and techniques, there appeared more stress on analytical study. This trend was more visible in the field of agricultural-geography. The French scholars

also adopted sophisticated statistical techniques. This trend led to the inter-disciplinary approach, to develop regional synthesis. Among the younger generation, there is more emphasis on the locational analysis of phenomena. There is increasing cognisance in the branches of climatology, botany, and sociology. The new trend shows that the spatial phenomena cannot be explained simply by correlation as expressed by Vidal de Lablache, they need to be explained as a part of the geographical whole (*ensemble*).

In brief recent researches are and have been oriented less towards description and regional analysis in a regional presentation, and more towards explanation with a genetic prospective. In physical geography there is more emphasis on process and systems of erosion; and reconstituting the stages of morphogenetic evolution. In human geography, emphasis has been placed on economic factors of production and consumption, on economic systems and regimes, on zones of influence, economic regionalization, the analysis of traffic flow, far more so than on the relations of those with the natural milieu.[48] Regional geography in France is now more concerned to describe and explain the complexity of the organisation of space. To achieve this goal, there is more use of detailed maps, and above all areal photographs.[49]