AMERICAN GEOGRAPHICAL SOCIETY
RESEARCH SERIES NO. 4a
W. L. G. JOERG, *Editor*

GEOGRAPHY IN FRANCE

BY

EMMANUEL DE MARTONNE
Professor of Geography, University of Paris

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BROADWAY AT 156TH STREET
NEW YORK
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CONTENTS

This booklet may be considered as forming part of a group of publications that deal with the development and present status of geography in Europe. These publications cover all the countries, except Russia, in which the subject has scientific standing—a total of twenty-two. Of the four countries in which geography is most highly developed—Great Britain, France, Italy, and Germany—there are special accounts of the first three. The list follows. Nos. 1, 2, and 3 are published by the American Geographical Society, Broadway at 156th Street, New York, N. Y., and will be sent postpaid on receipt of the prices indicated.

(1) W. L. G. Joerg: Recent Geographical Work in Europe. Reprinted from the *Geographical Review*, Vol. 12, 1922, pp. 431–484. [Survey of twenty-two countries.] 50 cents.

(2) Sir John Scott Keltie: The Position of Geography in British Universities. 33 pp. *American Geographical Society Research Series No. 4.* 1921. 50 cents.

(3) Emmanuel de Martonne: Geography in France. 70 pp. *American Geographical Society Research Series No. 4a.* 1924. [This booklet.] $1.25.

(4) Roberto Almagià: La Geografia [in Italia]. 120 pp. 2nd edition. Fondazione Leonardo per la Cultura Italiana, Rome, 1922. Lire 3.50.

INTRODUCTION

It has been said that geography is one of the modern sciences in which national temperament and traditions are best reflected and one of the last to escape that internationalism to which all sciences quite naturally seem dedicated.[1]

The American student who wishes to be correctly informed of tendencies in geography in France or in Germany must still make a certain effort to understand its characteristics and to appreciate the reason for the persistence of certain ideas, for the preponderant development of certain directions. The French geographer who wishes to follow tendencies in American geography must make a like effort. In an endeavor to foster this comprehension the author accepted with pleasure the invitation of the American Geographical Society to prepare an account of the development and status of geography in France.[2]

For the benefit of the American reader attention will be called in this survey particularly to the conditions which differ from those that obtain in the United States.

[1] Emmanuel de Martonne: La science géographique, pp. 375–396 of Vol. 2 of "La science française," 2 vols., Paris, 1915, published on the occasion of the Panama-Pacific Exposition at San Francisco.

[2] The manuscript was written in French. The author has revised the translation. —EDIT. NOTE.

CHAPTER I

GENERAL CHARACTERIZATION

Widespread Interest in Geography

The Frenchman often accuses himself of being ignorant of geography, and by that he means that he does not know the respective locations on the map of countries, cities, and rivers. In fact, this pleasantry, which often flows from the journalist's pen, indicates how important geography is considered to be and to what extent the general public understands its scientific significance.

In all stages of education, from the primary school to the university and the higher professional schools, geography has its place. In every educated family an atlas is an important volume in the library. The number of geographical societies giving lectures in all parts of France is considerable. It may therefore be said that there are few countries where interest for geography is more widespread than in France. Nevertheless, a knowledge of modern geography as a descriptive and explanatory science dealing with the physical and human phenomena of the surface of the globe in their distribution and interaction is far from being as widespread. For the great majority the geographer remains to this day the man who makes maps or who explores new countries or else whose good memory retains all the details put on the maps.

On the other hand, there is a group of specialists, who are for the most part university professors, continually increasing in number, among whom devotion to and knowledge of modern geography are highly developed and possibly more deep-rooted than elsewhere. The cohesion of this group is particularly noteworthy. Their publications hold the attention of foreign men of science and have the earmarks of being products of a distinct, well-organized school whose principal field of work is regional geography and human geography.

However, if one were to put together on the shelves of a library all the geographical publications of the last fifty years in France, one would see predominate works which reflect other tendencies and which indicate a less precise conception of geographic method. These works should not be neglected, both because of their number and because the tendencies they represent are far from having disappeared.

Development of Geography

In order to understand this situation the circumstances must be considered under which geography developed in France.

The Mathematical and Historical School

Before the development of modern geography, which dates from the nineteenth century, France had her "geographers"; but they were really cartographers, employing mathematical knowledge in the preparation of an accurate and large-scale map of France, such as Sanson, Picard, Cassini; or historical and even philological knowledge in their attempts to reconstruct, from the material available in earlier writers, the general features of the map of distant and still little-known countries, such as Guillaume Delisle and Bourguignon d'Anville. The Académie des Sciences on the one hand and the Académie des Inscriptions et Belles Lettres on the other were during the seventeenth and eighteenth centuries the centers of this erudite geography, which was practically unknown to the general public. The tradition of mathematical and historical geography persisted for a long time; it is with this tradition that are connected the standard treatises on map projections of Germain and of Tissot,[1] the substantial studies of Paul Vidal de la Blache,[2] Marcel Dubois,[3] Lucien

[1] A. Germain: Traité des projections des cartes géographiques: Représentation plane de la sphère et du sphéroïde, Paris, n. d. [1866]. A. Tissot: Mémoire sur la représentation des surfaces et les projections des cartes géographiques, Paris, 1881.

[2] Paul Vidal de la Blache: Marco Polo, Paris, 1891; *idem:* Les voies de commerce dans la géographie de Ptolémée, *Comptes Rendus de l'Acad. des Inscriptions et Belles Lettres* [*de Paris*], 1896; *idem:* La rivière Vincent Pinzon: Étude sur la cartographie de la Guyane, Paris, 1902.

[3] Marcel Dubois: Examen de la géographie de Strabon, Paris, 1891.

Gallois,[4] Charles de La Roncière.[5] The fact that this was the dominant tradition when the Institut de France was established in 1795 explains why geography in the modern sense has no place there. The Institut is made up of five learned societies, two of which are those just named, and the division into branches of science which these constituent societies represent, once fixed, has remained unchanged.

TRAVELERS AND EXPLORERS

The interest which, however, exists among the general public in France would never have developed but for the part taken by French travelers and particularly officers in the exploration of the globe in the nineteenth century, but for the formation of the French colonial empire in Africa and in Asia, and finally but for the development of geographical societies, which focused the interest awakened by these events. It was a Frenchman, René Caillié, who first penetrated the heart of the Sudan at Timbuktu, then a still mysterious city. Cailliaud pushed forward to the sources of the upper Nile before Baker and Grant. D'Abbadie devoted his whole life to Abyssinia, as later did Alfred Grandidier to Madagascar. Garnier, who died during his last expedition in Indo-China, a country which he had revealed in its fundamental traits; Dutreuil de Rhins, who was assassinated during a fruitful expedition to Tibet; Crevaux, who found death among the Indians of Bolivia; Flatters, who fell a victim to the Tuaregs in his attempt to penetrate the heart of the Sahara—these are the outstanding names of the martyrs among French explorers.[6]

Faidherbe, Galliéni, Lyautey are the best known among those organizing and conquering generals who have established the authority of France and who have brought peace and order into hitherto turbulent countries and at the same time have largely

[4] Lucien Gallois: Les géographes allemands de la Renaissance, Paris, 1890.
[5] Charles de La Roncière: Histoire de la marine française, 2 vols., Paris, 1899–1900.
[6] Caillié in Timbuktu, 1828; Cailliaud in Meroë, 1821; d'Abbadie in Abyssinia, 1838–1848; Huc and Gabet in Lhasa, 1846; Garnier on the Mekong, 1866–1868; Dutreuil de Rhins in Tibet, 1891–1894; Crevaux in Guiana and the Orinoco and Amazon regions, 1877–1882; Flatters in the Sahara, 1880.

contributed to our geographical knowledge of Senegal, Madagascar, and Morocco.

THE GEOGRAPHICAL SOCIETIES

During the whole nineteenth century the geographical societies —the first of which was founded in Paris and later ones in most of the provincial cities—have been able to satisfy the legitimate curiosity of their members in making them annually acquainted with explorers who brought news from distant lands. Although the range of unknown countries grows smaller from day to day, the interest of the public in recitals of travel still persists; so much so that even the more serious geographical societies have been diverted from carrying out substantial studies according to the methods of modern geography.

THE UNIVERSITIES

It is in the universities that the French geographical school, whose originality and close cohesion are so remarkable, has developed. That its development has been later than that of the German geographical school, for instance, is due to the fact that the French universities were really not organized until after 1871. The division into faculties undertaken at that time has in part determined the orientation of the French school, as will appear presently. But there must also be taken into consideration the decisive influence of a strong personality, namely Paul Vidal de la Blache.

Far be it from us to neglect the imposing work of Elisée Reclus, who, after his two volumes on general geography had appeared in 1869, succeeded by fruitful and uninterrupted labor in publishing in less than twenty years the 19 volumes of his "Géographie Universelle." This great work contributed to the extension of a taste for geography. But the several volumes published by Vidal de la Blache and especially his teaching through thirty years at the École Normale Supérieure and at the Sorbonne have, by imparting a rigorous method, given direction to the work of all the young geographers whom he trained.

MULTIPLICITY OF FACTORS OPERATING IN DEVELOPMENT

Rather by bearing in mind all these circumstances than by the inspection of a well-supplied library will one understand the development of geography in France during the last fifty years. In this way one will also be better able to appreciate the present-day activities of the various geographical organizations of France.

CHAPTER II

GEOGRAPHICAL SOCIETIES AND KINDRED INSTITUTIONS

It is proper to begin with the geographical societies, as they have done so much to spread the interest in modern geography in France.

The Paris Geographical Society

The Société de Géographie of Paris is the oldest society of this type. This Society celebrated its centenary three years ago.[1] At first it was an association of scientific men. In addition to the *Comptes Rendus* of its meetings it published a *Bulletin*, with the collaboration of Malte-Brun, author of a large descriptive geography,[2] Barbié du Bocage, and Walckenaer, both known for their studies in historical geography. It also published *Mémoires* and a collection of accounts of voyages in part translated under the direction of Jomard. The number of its members in 1827 was 378. At present it is more than 2000.

The development of the Society coincides with that of the great explorations in the middle of the nineteenth century: it has contributed to the encouragement of explorers. In the very first years it instituted a prize of 10,000 francs to the first Frenchman who should enter Timbuktu (this was René Caillié). The Society has since decorated a large number of famous explorers and even organized certain expeditions, such as the expedition of Foureau and Lamy to the Sahara. The increasing prosperity of the Society led it in 1878 to erect a building especially suited to housing its library, which was continually increasing, and to giving lectures to large audiences. The building, still occupied by the Society, was dedicated on September 2, 1878, in the

[1] See the volume published on this occasion: Centenaire de la Société de Géographie, 1821–1921, 72 pp., Paris, 1921 (republished with an account of the centenary as an 151-pp. book, Paris, 1921 and in *La Géographie*, Vol. 36, 1921, No. 2).

[2] V. A. Malte-Brun: Précis de géographie universelle, 8 vols., Paris, 1810–1829.

presence of delegates from the geographical societies who were attending the international exposition.

This development of the Society has not gone on without changing its original character. The Society more and more appeals to the general public. Lectures and formal receptions to great explorers constitute an increasingly important part of its activities. The *Mémoires* were dropped; as exceptional undertakings the Society published the itineraries of Crevaux in South America[3] and paid for the printing of the results of the Foureau-Lamy mission.[4]

Beginning in 1882 the Society distributed to its members the issues of the *Comptes Rendus* of its meetings and a quarterly *Bulletin*. In 1900 the two organs were merged into one journal, the format of which (large octavo) was reduced in 1920.[5] Committee meetings for the discussion of technical subjects were held on various occasions but have not been continued because of the lack of close contact with the centers for the scientific study of geography which the universities had become.

The Société de Géographie of Paris continues none the less to play an important rôle and one of manifest usefulness. Its list of members includes all persons of importance interested directly or indirectly in geography; the Society can bring them together speedily on all occasions of interest. In quasi-official contact with all the important circles in finance and industry, it is able to collect funds to honor the memory of an explorer. As it receives donations[6] the Society controls sufficient funds to permit the annual distribution of thirty prizes, either in money or as medals, and these are awarded for the best geographical publications or for the most interesting explorations. Certain endowments may even be used to organize an expedition. Some donations are relied upon to reduce in part the expense of publications of scientific character and restricted sale. One donation is provided

[3] Jules Crevaux: Fleuves de l'Amérique de Sud, Paris, 1883.
[4] Fernand Foureau: Documents scientifiques de la mission saharienne, 2 vols. and atlas, Paris, 1903–1905.
[5] See Chapter VII, p. 55.
[6] The total value of the endowments received by the Society on condition that the interest shall be applied to the specific objects indicated by the donors amounts to 3,000,000 francs.

for the study of a French region, the investigation to be published in the Society's journal. Several important contributions to the geography of France are traceable to this donation, for example, that of Marcellin Boule on the last volcanoes of France,[7] that of L. A. Fabre on Aquitanian (southwestern) France,[8] and that of V. Paquier on the Baronies.[9]

The library of the Paris Geographical Society, continually being enlarged by gifts and exchanges, receives on the average 1000 volumes a year and in 1922 numbered 200,000 volumes and pamphlets. In addition there are a collection of manuscripts, about 10,000 maps, 30,000 photographs, and 10,000 lantern slides. Analysis of these accessions, systematically organized within the last few years, results in the publication of comprehensive bibliographical notes which are occupying more and more space in the Society's journal and rendering a significant service to students.

Prince Roland Bonaparte has been the president of the Society for the last ten years; its secretary-general is Guillaume Grandidier, son of the celebrated explorer of Madagascar and continuer of his work.

In 1876 the Society reproduced itself in giving birth to the Société de Géographie Commerciale of Paris, which rapidly increased in size by the creation of branches in a number of provincial cities. Its total membership, including the branches, is 2500. This Society organizes lectures, has an important library, and publishes a journal.

The Alpine Club

There are in Paris several societies whose activities contribute notably to the progress of geographical knowledge, although they do not claim to be specifically geographical. Prominent among these is the Club Alpin.

[7] Marcellin Boule: L'âge des derniers volcans de la France, *La Géographie*, Vol. 13, 1906, pp. 177–194, 275–300, and 349–369.

[8] L. A. Fabre: Le sol de la Gascogne, *La Géographie*, Vol. 11, 1905, pp. 257–284, 343–358, and 413–434.

[9] V. Paquier: Étude sur la formation du relief dans le Diois et les Baronnies orientales, *La Géographie*, Vol. 6, 1902, pp. 197–217, 289–308, and 375–391.

The development of this society is not unlike that of the Société de Géographie. At the beginning it had a limited number of members, and its *Bulletin* published scientific papers of high value, like the synopsis of the structure of the Pyrenees by F. Schrader and Emmanuel de Margerie.[10] The growth in its membership has more and more turned the Society towards practical aims. *La Montagne*, the present journal of the Club Alpin, mainly publishes accounts of first ascents; sometimes there are short monographs on a given peak, with geological notes, and occasionally an original topographical survey.

A small group of alpinists remained faithful to scientific investigations and directed its activities particularly towards topography and cartography. This group centered around Henri Vallot and Colonel Goulier to form the Commission de Topographie du Club Alpin. It is from this commission that have come all the private undertakings which have contributed to our better knowledge of the summit regions of the Alps and the Pyrenees, by supplementing the insufficiency of the official bureaus.

Henri Vallot with a staff of devoted collaborators undertook the precise survey of the Mont Blanc group by means of a new triangulation and the employment of photographic surveying simultaneously with plane-tabling.[11] F. Schrader attacked the most difficult parts of the Pyrenees. His map in 1:100,000 of the central massif of the Spanish Pyrenees remains unique for its accuracy and for its faithful expression of local relief.[12] Even more remarkable than these are the surveys in 1:20,000 of the Cirque de Gavarnie published in 1914.[13] Numerous partial surveys of glaciated summits of the Alps and Pyrenees have been

[10] Emmanuel de Margerie and F. Schrader: Aperçu de la structure géologique des Pyrénées, *Annuaire du Club Alpin*, Vol. 18, 1891.

[11] Only one sheet of the map has appeared to date. Operations relating to the whole extent of the map have been taken up again since the war; and P. Vallot, son of Henri Vallot, who recently died, is actively engaged in the final completion, so that the publication of the whole work may be expected in the near future. It will consist of 22 sheets on the scale of 1:20,000.

[12] F. Schrader: Pyrénées centrales, avec les grands massifs du versant espagnol, 6 sheets in 1:100,000, Club Alpin, Paris, 1885.

[13] F. Schrader: Massif de Gavarnie et du Mont Perdu, 1:20,000, published with the collaboration of the Club Alpin, Paris, 1914.

published in *La Montagne:* the results would be more evident and would form a more homogeneous unit if many of the undertakings of the last twenty years had not been interrupted by the war.

The most important undertaking which relates to this movement is that of Paul Helbronner. This engineer has not hesitated to assume a burden which would seem to be beyond the capacity of one person, namely the complete retriangulation of the French Alps. He published the first results in a superb volume.[14] His work in the field would have been finished but for the interruption of the war. The calculations will still require many years. A certain number of panoramic photographs taken from high peaks were the subject of a special publication of great geographical interest.[15] Still more noteworthy is the collection of colored plates reproducing the original drawings of this geodesist who is at the same time an artist.[16]

The Commission de Topographie of the Club Alpin has unfortunately recently lost its chief in the death of Henri Vallot, who during the last twenty years had been the inspirer of all alpine topographers, had devised or improved alpine topographic methods, and had published important manuals on surveying in high mountains.[17] His memory continues to inspire devoted topographers like Captain Maury, who succeeds to Schrader's work in the Pyrenees, and Robert Perret, who is surveying the limestone Alps of Faucigny.[18]

It will be seen that an interesting movement for the topographic study of high mountains continues to develop among French alpinists.[19]

[14] Paul Helbronner: Description géométrique détaillée des Alpes françaises, Vol. 1: Chaine méridienne de Savoie, Paris, 1910.

[15] Tours d'horizons photographiques extraits de la "Description géométrique . . . ", Paris, 1911.

[16] Description géométrique détaillée des Alpes françaises, Annex to Vol. 2, portfolio, Paris, 1921.

[17] Henri Vallot: Manuel de topographie alpine, Paris, 1904.
Henri Vallot and J. Vallot: Applications de la photographie aux levés topographiques en haute montagne, Paris, 1907.
Henri Vallot: Levés à la planchette en haute montagne, Paris, 1909.

[18] Robert Perret: Carte de la Vallée de Sales et du Cirque des Fonts (Alpes calcaires du Faucigny), 1:20,000, Paris, 1922, accompanied by a note on the map.

[19] A good sketch of this whole movement has been given by Robert Perret: La topographie privée en France, *Le Correspondant*, November 10, 1922.

The Club Alpin has branches in the provinces. The most active is that in Lyons, which publishes its own journal, *La Revue Alpine*, in which appear, besides accounts of ascents, interesting studies of the local region and a chronicle of Alpine centers which is of much interest from the climatological standpoint.

Provincial Geographical Societies

The Société de Géographie of Paris also established branches in the provinces which soon became independent societies. Their number has increased to such an extent that there are but few cities in France in which one does not exist. The majority of them are mainly concerned with giving lectures in which the general public is made acquainted with the explorers of the day and their work or with the political and economic questions of the moment. The most important of these societies publish journals, and some which are established in university towns receive the collaboration of the members of the faculty, who give them the benefit of their experience and submit their works and those of their students to them for publication.

GEOGRAPHICAL SOCIETY OF LILLE

Thus, for instance, the Société de Géographie of Lille has become one of the most flourishing and progressive in France. Albert Demangeon was its secretary-general when he was professor at the University of Lille. The same position has been held by his successors at the university, Antoine Vacher, J. Petit, and at present Maximilien Sorre. This is possibly the only geographical society whose creation was due to the initiative of a professor. Indeed, it was the geographer Foncin, rector of the University of Lille in 1880, who founded the Union Géographique du Nord de la France with branches in Douai, Lille, Amiens, Arras, Béthune, Boulogne, Cambrai, Charleville, Dunkirk, Laon, St. Omer, St. Quentin, Valenciennes, and Avesnes. The branch at Lille from the beginning undertook geographical excursions. Later on when it became an independent society it continued this tradition: a party of its members went to North Cape in

1892, another went as far as Nizhni Novgorod in 1896. Established in one of the foremost industrial and commercial centers, the Society had many among its members who were willing and able to go on longer trips, such as to Scotland, Scandinavia, Egypt, Spain, Algeria. Thirty to forty lectures were given each year. The journal published annually did not, however, offer anything of geographic interest until contact was established between the geographical department at the university and the Society. Since then substantial studies on the geography of the region by students of Professor Demangeon have been published in it.[20] The war affected the Society very seriously. But before the ruins of the city had been completely rebuilt the Society had already succeeded in re-acquiring 2000 members.

GEOGRAPHICAL SOCIETY OF LYONS

The Société de Géographie of Lyons showed great activity during the time when the professor of geography at the university was its vice president. Its journal, completely transformed, published interesting papers on local geography. It organized excursions and study meetings whose proceedings are worthy of note.[21] The war interrupted this activity, which has just been resumed. The popularity of the Club Alpin among the citizens of Lyons is detrimental to the development of the Geographical Society.

GEOGRAPHICAL SOCIETY OF MONTPELLIER

The Société de Géographie of Montpellier, or Société Languedocienne de Géographie, is another of those which, owing to an

[20] E. g. Alfred Fichelle: Études de géographie humaine sur quelques communes de la haute vallée de la Deûle, *Bull. Soc. de Géogr. de Lille*, Vol. 57, 1912, pp. 213–246; Théodore Lefebvre: La vie rurale en Pévèle, *ibid.*, Vol. 59, 1913, pp. 80–103, 170–187, and 228–242. See also Marcel Coulon: L'estuaire de la Seine et le port du Havre: Conditions naturelles et conditions économiques, *Bull. Soc. Normande de Géogr.* (Rouen), Vol. 32, 1910, pp. 155–169 and 196–244.

[21] See especially Emmanuel de Martonne and A. Cholley: Excursion géographique dans les Alpes du Dauphiné, *Bull. Soc. de Géogr. de Lyon*, Ser. 2, Vol. 1, 1908, pp. 201–241; Eugène Locussol: Les industries du Velay, *ibid.*, pp. 242–272; L. F. Tessier and André d'Alverny: Le déboisement et les inondations, *ibid.*, pp. 12–38; Frédéric Bolle: La région industrielle de Montbéliard, *ibid.*, Vol. 2, 1909, pp. 97–105; Ivan Assada: Les transformations économiques récentes dans le bassin de Bellegarde-sur-Valserine, pp. 17–25; Étienne Lager: La Dombes, *ibid.*, Vol. 5, 1912–13, fasc. 2, pp. 1–43; fasc. 3, pp. 24–46; fasc. 4, pp. 16–37; Vol. [6], 1914, [fasc. 1], pp. 1–30.

intimate contact with the university, has been able to do fruitful work in the development of the geography of the local region. The file of its journal must be consulted by all those who are working on the geography of Mediterranean France. It contains substantial studies in plant geography by Charles Flahault and his pupils,[22] in human geography by Maximilien Sorre[23] and by the pupils of Jules Sion,[24] in local climatology by Emmanuel de Martonne.[25] The Société Languedocienne de Géographie has published a geography of the Languedoc in several volumes, a work of importance edited jointly by various specialists.[26]

FRENCH NORTH AFRICAN GEOGRAPHICAL SOCIETIES

French North Africa also has its geographical societies whose activities have likewise been stimulated by contact not only with administrative but with university circles. The Société de Géographie of Algiers has for several years issued a bibliographical journal of publications on North Africa under the editorship of Augustin Bernard, at the time professor at the University of Algiers, a series which has unfortunately been interrupted. The Société de Géographie of Oran has published a certain number of valuable studies. The Société de Géographie of Morocco, recently founded in Casablanca, publishes a journal with interesting proceedings and contributions to local geography; it undertakes geographical excursions. Its flourishing condition derives from the contact established by Commandant Edouard de Martonne with the Service Géographique Militaire du Maroc, and by MM. Hardy and Célerier with the Institut Chérifien des Hautes Études.

[22] Charles Flahault: Premier essai de nomenclature phytogéographique, *Bull. Soc. Languedocienne de Géogr.*, Vol. 24, 1901, pp. 157–192; Marcel Hardy: La géographie et la végétation du Languedoc entre l'Hérault et le Vidourle, *ibid.*, Vol. 26, 1903, pp. 121–152 and 268–304.

[23] Maximilien Sorre: La répartition des populations dans le Bas-Languedoc, *Bull. Soc. Languedocienne de Géogr.*, Vol. 29, 1906, pp. 105–136, 237–278, and 364–387.

[24] Henriette Agrel: Le causse de Sauveterre: Essai de géographie humaine, *Bull. Soc. Languedocienne de Géogr.*, Vol. 42, 1919, pp. 66–106, 116–152, and 243–278; L. Bousquet: Les genres de vie dans le delta du Rhône, *ibid.*, Vol. 45, 1922, pp. 5–42 and 179–209.

[25] Emmanuel de Martonne: Note préliminaire sur le vent d'autan, *Bull. Soc. Languedocienne de Géogr.*, Vol. 30, 1907, pp. 100–114; *idem:* Contribution à l'étude du vent d'autan, *ibid.*, Vol. 32, 1909, pp. 135–157.

[26] Géographie générale du Département de l'Hérault, 3 vols., Montpellier, 1891–1905.

OTHER PROVINCIAL GEOGRAPHICAL SOCIETIES

In France there are a large number of other geographical societies, chiefly those at Marseilles, Rouen, Dijon, Lorient, Toulouse, Rochefort, Tours, Toulon, Bourges, St. Quentin, Laon, Dunkirk, Poitiers, Le Mans, and Valenciennes.

This enumeration is sufficient to show that the word geography is able everywhere in France to bring together educated persons to an extent that in the United States it is possibly difficult to realize. Evidently this is a fortunate circumstance, but it must be confessed that all these groups are far from contributing as much as could be desired to the progress of geographical knowledge.

THE GEOGRAPHICAL COMMISSION OF THE MINISTRY OF PUBLIC INSTRUCTION

In part in order to co-ordinate the activities of these societies a geographical commission was created under the Ministry of Public Instruction and the Fine Arts which is officially styled "Section de Géographie du Comité des Travaux Historiques et Scientifiques"; its members are nominated by the minister. It is the function of the Comité of which this commission is a subdivision to follow and co-ordinate the activities of the different scientific societies and particularly to organize a Congrès des Sociétés Savantes, which brings together every year in a different city the delegates of the numerous societies for local studies which exist in even the smallest cities in French territory. Truth compels one to say that the vitality of this organization does not entirely correspond to the support it receives from the government. It originated in the Second Empire under the influence of Napoleonic traditions. State control of scientific activities is becoming less and less customary in the French democracy. The Section de Géographie was originally created under the name of "Section de Géographie Historique et Descriptive," a title which sufficiently indicates the early tendencies of French geography. Its members were for a long time mainly historians. Its present president and secretary are both known for their work in the history of geography (Henri Cordier

and Charles de La Roncière). It examines the publications of the geographical societies sent to the ministry and geographical works submitted for official approval; its journal contains the communications made to the Section de Géographie des Congrès des Sociétés Savantes and certain reports on scientific missions to foreign countries. Thus from time to time important memoirs in modern geography have appeared under the auspices of this organization, such as those of Marchand and Fabre on the Pyrenees,[27] of Harlé on the dunes of Gascony,[28] and of Emmanuel de Martonne on the Alps and Carpathians.[29]

The National Committee of Geography

In addition to this official control organization there has recently been created by the Académie des Sciences—a scientific body whose authority is incontestable and whose government connections are much less evident—the Comité National de Géographie, a more independent organization closely related to similar organizations in the principal countries friendly to France.

It was at one of the meetings of the scientific academies of the Allied countries at the end of the war that the delegates of the United States called attention to the organization of its National Research Council and proposed the creation of an international council for scientific research divided into international sections for geodesy, physics, etc. These international sections were to be made up of the national committees. The Comité National de Géographie has been formed in France in response to these suggestions; its president is General Bourgeois, senator, member of the Académie des Sciences, and former director of the Service Géographique de l'Armée; its secretary-general is Emmanuel de Martonne.

[27] E. Marchand and L. A. Fabre: Les érosions torrentielles et sub-aériennes sur le plateau des Hautes-Pyrénées, *Comptes Rendus Congrès des Sociétés Savantes, Toulouse, 1899*, pp. 182–220, Paris, 1900.

[28] Edouard Harlé and Jacques Harlé: Mémoire sur les dunes de Gascogne, *Bull. Section de Géogr. du Comité des Travaux Hist. et Sci.*, Vol. 34, 1919, pp. 1–145.

[29] Emmanuel de Martonne: Sur la toponymie naturelle des régions de haute montagne, en particulier dans les Karpates méridionales, *Bull. Section de Géogr. du Comité des Travaux Hist. et Sci.*, Vol. 15, 1900, pp. 83–91; *idem:* Étude morphologique des Alpes orientales (Tauern) et des Karpates septentrionales (Tatra), *ibid.*, Vol. 26, 1911, pp. 387–406.

The members of the Comité form five commissions: on topography and cartography (president, Colonel A. Bellot), on physical geography (president, Emmanuel de Margerie), on biological geography (president, L. Joubin), on human geography (president, Jean Brunhes), and on historical geography (president, Henri Cordier). This French Comité National de Géographie participated in the formation of the Union Géographique Internationale at Brussels in July, 1922. It has assumed a definite objective in adopting the proposition of Robert Perret and deciding to prepare a large atlas of France. The preliminary studies have led to a program whose realization will take prolonged effort and financial support, which it is hoped will be furnished by the government. The atlas of France will consist of 80 sheets of 200 maps and inset maps that will represent French territory in all its physical and economic aspects. A large number of the maps will be original. All the specialists whose work relates to geography, including geologists, meteorologists, botanists, zoölogists, economists, have promised their collaboration. The Service Géographique de l'Armée is to study the source material and the methods of reproduction. A special commission has been appointed to carry out this project. Its president is Emmanuel de Margerie; vice presidents are Albert Demangeon and Emmanuel de Martonne; secretaries, Robert Perret and Camille Vallaux.

The Comité National de Géographie is, owing to the lack of a geographical section at the Institut de France, the highest authority existing at present in France in the domain of geography.

The Association of French Geographers

There remains to be mentioned, in order to complete this review of geographical organizations in France, the Association de Géographes Français. This is a group of professional geographers similar to the Association of American Geographers, qualification for membership in which is to have published a geographical work or to be engaged in the teaching of geography.

Its president is Lucien Gallois, its secretary-general Emmanuel de Martonne.

The Association de Géographes Français does not publish a journal and does not give lectures, as do the geographical societies. It proposes to publish or reprint works helpful to the development of scientific geography. As its first piece of work it has undertaken the resumption of the publication of an annual geographical bibliography continuing the *Bibliographie des Annales de Géographie*, edited by L. Raveneau, the reputation of which was universal but whose publication had been interrupted by the war and by the high cost of printing. The Association has succeeded in the undertaking, in spite of all the difficulties, owing particularly to the subscriptions received from its sustaining members, from the Confédération des Sociétés Scientifiques Françaises, and from the government.[30] In 1922 it organized geographical excursions the reports on which may form a forthcoming publication.

Summary

To summarize: The geographical societies were at first the only type of organization that cultivated geography in France. They performed a great service and still do so in attracting the attention of the public. Various attempts at co-ordinating their efforts, more or less successful, have been made. New organizations appear with the creation of the Comité National de Géographie and the Association de Géographes Français. But it is becoming more and more evident as we proceed in this survey that it is in the universities that investigations in modern geography are being worked out, investigations which are capable of advancing the science by the permanent acquisition of facts and the stabilizing and continual perfecting of theories.

[30] Association de Géographes Français: *Bibliographie Géographique*, Vol. 25–29, 1915–1919, and Vol. 30–31, 1920–1921, continuation of the *Bibliographie Géographique Annuelle* (of the *Annales de Géographie*), published under the editorship of Elicio Colin, Paris, 1921 and 1922.

CHAPTER III

GEOGRAPHY IN THE UNIVERSITIES

The complex character of modern geography explains the fact that the conditions for its development are more favorable in the universities than elsewhere. Geography draws on the most widely different subjects—on the physical and biological sciences, on history and the social sciences; it is in the universities that all the tools of research are found together at one and the same time. In order to be more than a heterogeneous conglomeration of ideas borrowed from all the sciences, geography has still need of a clear understanding of its own method; it requires of its followers a certain discipline, constancy to certain orientations. The realization of these conditions is difficult in such organizations as geographical societies: it is hardly possible elsewhere than in universities, where research is under the direction, control, and authority of a professor, where the discipline of the subject asserts itself through the medium of examinations, and where the spirit of the school itself is all-pervasive.*

The Organization of French Universities

University organization has therefore great importance. It may favor or hinder the normal development of geography. The organization of French universities, which differs from that of American universities, in certain respects is disadvantageous to this development and in others advantageous.

It will be remembered that all French universities are state universities.[1] Their organization is therefore uniform. At all

* Although it deals mainly with secondary education the English-speaking reader will find much of interest relating to the topic of the present booklet in: E. M. Butterworth: The Teaching of Geography in France: A Comparative Study (Report of Observations Made, 1920–21, As Gilchrist Geography Student), London, 1922. Chapter 8 is devoted to "Geography in the French Universities."—Edit. Note.

[1] To be sure there exist higher educational institutions of a confessional character; these are the Catholic Faculties at Lille, Angers, and Lyons. The curriculum at these institutions hardly differs from that at the universities. At present geography plays only a subsidiary rôle. The professors have for the most part had university training.

of them there exists the division into faculties, among which there is a Faculté des Sciences and a Faculté des Lettres. This separation of scientific from literary studies is not favorable to geography, which needs to be in touch both with the physical and biological sciences, which are under the jurisdiction of the Faculté des Sciences, and with the historical sciences, which are under the jurisdiction of the Faculté des Lettres.

PLACE OF GEOGRAPHY IN THE CURRICULUM

Another fundamental fact is this: geography is a subject in the curriculum in all classes of the secondary schools (*lycées* and *collèges*); these also are state institutions, and the subject is here hardly ever in the hands of a specialist but in those of an historian. Until the final reorganization of the universities the faculties, which led separate existences under the direct control of the state, had as their principal object the training of teachers for secondary schools. The consequence is that it was in the Faculté des Lettres, in connection with history, that the higher teaching of geography was organized.

The drawbacks of this situation are readily understandable. University geography was deprived of the necessary contact with the physical and biological sciences. We have seen that the development of geography had in France long been directed towards mathematical and historical geography. The historical tradition was perpetuated during a rather long period in the French universities. The first doctoral dissertations were studies of the geographers of antiquity. The chair of geography at the Sorbonne was for a long time occupied by an eminent historian (Himly), who was a total stranger to the methods of modern geography. It was an engineer, Surell, who, in his studies of the torrents of the Alps,[2] established the essential principles of the development of erosional forms; a geologist, Albert de Lapparent, who popularized the modern conception of the evolution of land forms,[3] which a topographer, General

[2] A. Surell: Étude sur les torrents des Hautes Alpes, 1841, 2nd edit., with a sequel by E. Cézanne, 2 vols., Paris, 1870–1872.
[3] Albert de Lapparent: Leçons de géographie physique, Paris, 1896.

de La Noë, had, in collaboration with Emmanuel de Margerie,[4] analyzed in a masterly way. The French universities would have remained inaccessible to these fruitful ideas if they had not had in their ranks an outstanding spirit who, in spite of his historical and literary training, had the vision to know what the orientation of geographical studies should be. Paul Vidal de la Blache, owing to his connection with the École Normale Supérieure, was in a position to assert a profound influence, the results of which have made themselves slowly but surely felt.

The École Normale Supérieure and the Influence of Vidal de la Blache

The École Normale Supérieure is an institution without a counterpart in the United States. Founded long before the universities to train *lycée* teachers, it secures its pupils, who are lodged, fed, and taught free of charge, by means of a very difficult competitive examination which results in the selection of superior students. Naturally these students often rise above secondary school teaching. Indeed, during a long period the École Normale Supérieure almost had a monopoly in furnishing professors to the faculties, now grouped together as universities. As the subdirector of the École Normale, especially in charge of the teaching of geography, Vidal de la Blache had as his pupils all the professors of geography who have since taught at the French universities. When he left for the Sorbonne his influence became larger in extent without gaining in depth. A strong personality of course asserts an influence on youthful minds. The attraction of the teaching of Vidal de la Blache was all the greater because he revealed to historians the scientific aspect of geography.

Among the selected group to whom his teaching was addressed he soon found minds flexible enough and wills firm enough to decide to make the necessary effort, even after having completed the normal requirement of studies, to acquire the knowledge of the natural sciences on which studies in modern geography must be based. The pupils of Vidal de la Blache could be seen in the

[4] G. de La Noë and Emmanuel de Margerie: Les formes du terrain, Paris, 1888.

lecture rooms of the Faculté des Sciences and, without losing the advantages of their literary and historical training, trying to acquire the training of naturalists. Only through this circumstance can be explained the sureness of touch that has guided the regional studies produced during the last thirty years in the French universities. One can understand why these studies were few as compared with the numerous publications of German geographers. One can perceive also the reasons for their special characteristics and the orientation which has long been dominant in these studies.

The French geographical school, established by Vidal de la Blache, is naturally oriented especially towards regional geography, for in that subject it can make count the qualities of method, of a feeling for composition, and of the art of description that are the attributes of minds trained in literary studies. It willingly takes up questions of human geography, in which the practice of historical studies is as indispensable as is that of the natural sciences in all questions dealing with physical geography. This orientation was strengthened by the personal influence of Vidal de la Blache. Gradually, however, it is losing its predominance. The voice of the master is silent. Educational conditions themselves are changing.

Present Development of Geography at the Universities

The École Normale Supérieure has ceased to be a training school independent of the university and is now nothing more than a residence hall for students holding fellowships at the University of Paris. The teaching of geography has become concentrated at the Sorbonne. A chair of physical geography has been created at the Faculté des Sciences. The examinations have changed in character and through greater flexibility lend themselves to combination with the natural sciences or with historical studies. The *licence* of the Faculté des Sciences has for about twenty years now been divided into *certificats*, which may be acquired in various combinations. The same system has recently been established in the Faculté des Lettres. A reform,

which now dates back about twenty years, had introduced into the *licence* for history and geography the requirement of an essay on physical geography and practical exercises in cartography.

Geographical excursions are undertaken at all the universities. Since 1905 an inter-university excursion brings together every year and in a different region of France the best geographical students of all the universities. Geographical laboratories or institutions are organized at most of the universities and are provided with maps, photographs, and instruments. Without abandoning human geography and regional geography the geographical students of the French universities are more and more attracted by problems in physical geography and are more and more likely to undertake problems in general geography. The foreign student who comes to a French university finds there all the necessary equipment for work in the physical aspect of geography. He will, however, still be able to trace the original tendencies of the French geographical school.

This will best appear as we take up the universities where geography is most developed and call attention to the professors, their work and that of their students, the equipment of their laboratories, and the direction of their activities.

CHAPTER IV

GEOGRAPHY AT THE UNIVERSITY OF PARIS

The chair of geography that has been longest established is the one at the University of Paris. But this chair has from the beginning been under the Faculté des Lettres. It has been occupied by historians, and the tradition of studies in historical geography was maintained until the day when Vidal de la Blache succeeded Dean Himly (1897). Vidal de la Blache, assisted by Lucien Gallois, founded the Institut de Géographie, while Marcel Dubois, in charge of colonial geography, created a parallel library and seminar for students specializing in that subject.

Organization of the Courses in the Institut de Géographie of the Faculté des Lettres

After the retirement of Vidal de la Blache his successor considerably increased the collections, which are cramped in their present quarters and are soon to be transferred to a building specially erected for the Institut de Géographie of the University of Paris (referred to on p. 34). Instruction has become more and more technical as a result of reforms in the examinations; the part played by practical exercises and excursions has increased every year. Of the original orientation toward historical geography little remains. But the general organization of studies in the Faculté des Lettres still always implies in the majority of cases the combination of history with geography, and the number of those who specialize in geography is relatively small in comparison with the large number that take the courses.

At present the most frequented courses in geography are followed by 180 students. Among them are about 15 who are specializing in geography and preparing a thesis in the subject to obtain the *diplôme d'études supérieures*, which is a specialized

examination, and about as many geographers who have already obtained this diploma and are continuing their studies for the *agrégation* in history and geography.

Instruction is organized so as to meet the needs of students preparing for the *licence* or the *agrégation* to the end that they may acquire in three years a rather complete training in geography.[1] Advanced work is also supplied for those who intend to specialize in geography. The courses include a course in general physical geography covering two years, with practical map exercises in two series, one for beginners and one for advanced students; a course in human geography in which there is taken up each year one of the major topics of economic geography, for instance communications, food resources, etc., with a series of practical exercises in economic geography; a course in regional geography for beginners, with questions, covering each year a different group of countries; a course in colonial geography, with practical exercises, in which Professor Augustin Bernard deals mainly with French North Africa; two courses in regional geography, intended particularly for the candidates for the *agrégation*, in which each year are taken up the subjects prescribed for the examination; and, finally, special courses in which the candidates for the *agrégation*, within the requirements of the examination, give a lecture themselves which the professor discusses and criticizes immediately after.

[1] It may be helpful here to call attention to the various kinds of university examinations, which are very different from those in American universities. The *license* was formerly an examination which gave the right to teach (*licentia docendi*) and which completed the first years of study. It has since been divided into several *certificats* (three or four *certificats* in any combination of subjects confer the title of *licentié*, but the *license* for teaching, i.e. literally the *licentia docendi*, is only conferred in the case of certain definite combinations of subjects). Two years are necessary to obtain the *license*. Examinations for the *license* are given at each university. The *agrégation* is a competitive examination held every year for all the candidates in France for the position of professor in a *lycée*, or state secondary school. The decision as to the results is in the hands of a jury nominated by the Minister of Public Instruction. As the number of positions is limited this examination is difficult, and the title of *agrégé* is sought after even by those who are planning to enter university rather than secondary teaching. Candidates for the *agrégation* must have passed the examination for the *diplôme d'études supérieures*, which is a small doctor's dissertation prepared in a university. For further details see the remarks by Professor Lucien Gallois at the conference on geographical education held during the American Geographical Society's Transcontinental Excursion of 1912, "The Teaching of Geography in French Universities," *Proc. Philos. Soc. Univ. of Virginia*, 1911–1912, pp. 107–112 (abstracted in *Bull. Amer. Geogr. Soc.*, Vol. 46, 1914, p. 122).

EXCURSIONS

Excursions are undertaken during the period of good weather at least once a month. In addition to the annual inter-university excursion already referred to, which lasts about one week, the Institut de Géographie organizes every year a two- or three-day excursion. Special excursions for a small group of special students occasionally are undertaken when circumstances make them possible. Thus in 1919 four students accompanied their professors to Algeria; in 1920 five students took part in a two months' excursion in Rumania under the direction of Emmanuel de Martonne.

STUDY GROUPS

A "groupe d'études géographiques" under the direction of Emmanuel de Martonne and Albert Demangeon includes the students specializing in geography and a certain number of former pupils who come together to submit their papers and discuss the more important recent memoirs. Multigraphed copies of the proceedings of these meetings are distributed and sent also to the former members of the group, who thus are kept in touch with the work and tendencies of the department.

There is no special training for the doctorate. As is well known, this scientific examination, for which in France preparation of two original pieces of work is required, necessitates a much greater effort than the one required in most countries for the doctor's degree. The candidate for the doctorate is generally no longer a pupil of the Sorbonne but is in close contact with a professor who follows his work. The papers read before the "groupe d'études géographiques" are mainly those of candidates for the doctorate, if not of holders of the *diplôme d'études supérieures.*

The interest created by geography in the student body in general, even among those who are not specializing in geography, is evidenced by the creation of a "Union Géographique de la Faculté des Lettres," which includes the majority of those who take the courses in geography. This group undertakes excursions and has lectures with lantern slides and conducts more intimate and elementary meetings for discussion.

From these statements it may be seen how active the Institut de Géographie is. Teaching occupies at least as important a place as research.

SEMINAR EQUIPMENT

The collections are intended for both these purposes. Other than wall maps they include more than a hundred manuscript diagrams and maps, about 3000 lantern slides and 10,000 photographs, a library of 4000 volumes, more than 30,000 topographic sheets (complete sets of most of the topographic surveys of the European countries, of the United States, of North Africa, and of India), 600 relief models—among which are the series prepared during the war of the battle front in France, of the Rhine region, of the Alps, of Czechoslovakia, and of the Balkans—and finally a collection of surveying instruments and instruments for map measurement (plane-table, pocket transit, telemeter rods, theodolite, prismatic astrolabe, four aneroid barometers for the determination of altitude, compass, planimeter, etc.)

The Teaching Staff

These details as to equipment have seemed necessary in order to give a correct picture of this most important center of geographical studies in France. The account would be incomplete if nothing were said of the persons who impart life to the Institut and orient its activity.

LUCIEN GALLOIS

Lucien Gallois is the dean of professors of geography at the Sorbonne. He has successively taught at the University of Lyons, at the École Normale Supérieure, where he succeeded Vidal de la Blache, and at the Sorbonne. His doctor's thesis on the geographers of the Renaissance in Germany[2] universally established his reputation as an historian of geography. He has no less favored the movement towards modern geography: he organized the first excursions at the Sorbonne, and, in combining his knowledge of historical questions with a study of land forms,

[2] Lucien Gallois: Les géographes allemands de la Renaissance, Paris, 1890.

he produced a very original book on the natural regions and the names of the *pays*.[3] Vidal de la Blache almost from the beginning besought his collaboration in editing the *Annales de Géographie*, to which journal he has since constantly devoted himself. Universally esteemed by his colleagues and his students, he was elected by French geographers as the president of their Association and by his colleagues at the Sorbonne to the Council of the university. He is also a member of the ministerial committee in charge of establishing the list of qualified candidates for university positions.

EMMANUEL DE MARTONNE

Emmanuel de Martonne has taught successively at the Universities of Rennes and of Lyons and at the Sorbonne. He was one of the first pupils of Vidal de la Blache who, abandoning the tradition of historical geography, devoted themselves to the study of land forms and completed their training by substantial work in the natural sciences. After a thesis for the *doctorat ès lettres* dealing with Wallachia, which is a regional monograph treating both physical and economic questions,[4] he also prepared a thesis for the *doctorat ès sciences* on the evolution of the relief of the Carpathians,[5] a study which is inspired by the principles of modern geography and is based on topographic and geologic surveys by the author. As his studies were directed more and more towards physical geography, including problems in climatology and even hydrography, he attempted to fulfill a need greatly felt by all by preparing a complete manual of physical geography in one volume,[6] the third edition of which appeared in 1920, and an abridged edition of which has just been published,[7] with a section on human geography.

[3] Lucien Gallois: Régions naturelles et noms de pays: Étude sur la région parisienne, Paris, 1908.

[4] Emmanuel de Martonne: La Valachie: Essai de monographie géographique, Paris, 1902.

[5] Emmanuel de Martonne: Recherches sur l'évolution morphologique des Alpes de Transylvanie (Karpates méridionales), *Rev. de Géogr. Annuelle*, Vol. 1, 1906–1907, pp. ix–xxi and 1–279.

[6] Emmanuel de Martonne: Traité de géographie physique: Climat, hydrographie, relief du sol, biogéographie, Paris, 1907; 2nd edit., 1913; 3rd edit., 1920.

[7] Emmanuel de Martonne: Abrégé de géographie physique, Paris, 1923.

Emmanuel de Martonne has on several occasions been called to foreign universities. In 1916–1917 he taught at Columbia University in New York, and in 1920 he was professor for one semester at the University of Cluj in Rumania, half of which time was devoted to excursions and study in the field.

He has always sought to develop a taste for local studies among his pupils and to train them to be able to undertake research themselves even in questions of physical geography. His stay at the University of Rennes was marked by the creation of a geographical laboratory and the organization, after numerous excursions which had already attracted colleagues, of the first inter-university excursion. The Institut de Géographie at the University of Lyons he made a center of local studies. Since his arrival at the Sorbonne the collections of the Institut de Géographie have grown considerably and the "groupe d'études géographiques" has been organized.

ALBERT DEMANGEON

While the activities of Emmanuel de Martonne tend to develop the subject toward the side of physical geography, the work of Albert Demangeon has consciously been oriented in the direction indicated by Vidal de la Blache, namely towards human geography. His doctor's thesis on the plain of Picardy[8] is the first of the monographs on French regions which have since followed one another and have mainly taken this monograph as a model. It may be considered a definitive work as regards the human geography of the region. His second work, on the utilization of documents in archives,[9] opened up a fruitful means of research. Since the war he has published a book entitled "Le Déclin de l'Europe" which caused a sensation and which has been translated into English.[10]

After having taught history and geography for a time at the *lycées* of Rheims and Amiens, Professor Demangeon was called

[8] Albert Demangeon: La Picardie et les régions voisines—Artois, Cambrésis, Beauvaisis, Paris, 1905.
[9] Albert Demangeon: Les sources de la géographie de la France aux archives nationales, Paris, 1905.
[10] Albert Demangeon: Le déclin de l'Europe, Paris, 1920; English edit. with the title "America and the Race for World Dominion," transl. by A. B. Maurice, Garden City, N. Y., 1921.

to the University of Lille and in 1912 to the Sorbonne. His stay at Lille has left its traces; he there created a real school of local geography by establishing a close contact with the Société Géologique du Nord and the Société de Géographie (see p. 12, note 20). At the Sorbonne he has devoted himself especially to human geography and has inspired more than one original piece of work. He is a teacher particularly liked by his students and an inspirer worthy of the master whose activity he continues.

AUGUSTIN BERNARD

Since the death of Marcel Dubois colonial geography has been represented at the Sorbonne only by Augustin Bernard, who deals particularly with French North Africa. Before he was called to Paris Augustin Bernard was professor at the University of Algiers; since then he has visited Algeria and Morocco every year and has published on these countries a large number of works, particularly a study of nomadism (jointly with Lacroix),[11] a study on native rural habitations in Algeria,[12] and a rainfall map of Morocco.[13] He also wrote an historico-geographical work on Morocco, the sixth edition of which has just appeared,[14] and he has begun in collaboration with Flotte de Roquevaire the publication of an atlas of Algeria.[15] Being in contact with colonial circles Professor Bernard represents within the university group a particularly interesting tendency which promises to develop.

Publications Emanating from the Institut de Géographie

DOCTOR'S THESES

We have now described the organization of the principal center of university studies in geography in France, indicated the number of its pupils, and sketched its present teachers. It remains to give an idea of the scientific results obtained. This

[11] Augustin Bernard and N. Lacroix: L'évolution du nomadisme en Algérie, Algiers, 1906.

[12] Augustin Bernard: Enquête sur l'habitation rurale des indigènes de l'Algérie, Algiers, 1921.

[13] Augustin Bernard: Le régime des pluies au Maroc, *Mémoires Soc. des Sci. Nat. du Maroc*, Vol. 1, 1921, pp. 1–95.

[14] Augustin Bernard: Le Maroc, 6th edit., Paris, 1922.

[15] Augustin Bernard and R. de Flotte de Roquevaire: Atlas d'Algérie et de Tunisie, Fascicule 1. Service Cartographique, Direction de l'Agric., du Commerce et de la Colonisation, Gouvernement Général de l'Algérie, Algiers and Paris, 1923.

cannot be done better than by calling attention to the doctor's theses published since 1908 and the essays presented for the *diplôme d'études supérieures* during the last ten years. In this connection one must remember that as to production this is an abnormal period: the war was not only a period of slackened activity for the Sorbonne, but it also seriously affected the following years by decimating the youth of the land.[16]

Jules Sion published a study of rural life in Normandy, in which he portrays the topic in successive historic pictures.[17] This study is almost without a rival in the accuracy and thoroughness of its analysis.

On the other hand Maximilien Sorre bases his analysis of the modes of life in the eastern Pyrenees [18] on a study of the physical and biological environment; less a historian, he shows himself to be an accomplished climatologist and botanist. The differences between the subjects in a certain measure justify the difference in the method of treatment.

The study of Poitou by Charles Passerat [19] is mainly physical; human geography is only discussed in the conclusion.

On the other hand René Musset has given us a complete monograph on the Bas Maine,[20] following Demangeon's "Picardie" as a model. His work is equally substantial and original with regard to physiography and in the analysis of the economic life of the region.

Captain J. Vidal de la Blache wrote a short and substantial

[16] Among those who were killed were Gaston Gravier, whose doctor's thesis on Serbia was far advanced (portions of it have been published in the *Ann. de Géogr.*: La Choumadia, Vol. 30, 1921, pp. 271–287 and 351–361); and Léon Boutry, who had also considerably advanced a thesis on the Ardennes (portions were published under the titles "La population de l'Ardenne," *Ann. de Géogr.*, Vol. 29, 1920, pp. 199–210; "La Forêt d'Ardenne," *ibid.*, pp. 261–279).

In the list of essays for the *diplôme d'études supérieures* on pp. 31–32 the authors who were killed during the war are specially indicated.

[17] Jules Sion: Les paysans de la Normandie orientale, Pays de Caux, Bray, Vexin normand, Vallée de la Seine: Étude géographique, Paris, 1909.

The second thesis of Jules Sion was a study in physical geography: Le Var supérieur, Paris, 1909.

[18] Maximilien Sorre: Les Pyrénées méditerranéennes: Étude de géographie biologique, Paris, 1913.

[19] Charles Passerat: Les plaines du Poitou, *Rev. de Géogr. Annuelle*, Vol. 3, 1909, pp. 155–380; also published separately, Paris, 1909.

[20] René Musset: Le Bas Maine: Étude géographique, Paris, 1917. The second thesis was a very thorough study in economic geography, De l'élevage du cheval en France, Paris, 1917.

sketch of the physical history of the Meuse in Lorraine,[21] Charles Monchicourt wrote a regional monograph on central Tunis,[22] and Tourneur-Aumont a study of medieval historic geography noteworthy both as to point of view and method.[23]

To this list may be added that of the theses under preparation which will soon be completed: H. Baulig, the Cévennes, a study in physical geography; A. Cholley, the Pre-Alps of Savoy, a regional monograph; J. Petit, the Ardennes, a study in physical geography; Myriem Foncin, the Parisian agglomeration, a study in human geography; Chabot, the plateaus of the Jura, a study mainly physical; Larnaude, Kabylia, a regional study; Captain Villatte, the geographical conditions of the war on the western front in 1914–1918; Capot-Rey, the Territory of the Sarre, a study in regional geography; Deffontaines, the settlement and population of northern Aquitania, a study in human geography; Dion, the "Val de Loire" (a section of the alluvial valley of the Loire), a study in human geography.

THESES FOR THE DIPLÔME D'ÉTUDES SUPÉRIEURES

Of the essays for the *diplôme d'études supérieures* we will only cite those of which a summary has been published during the last ten years: Georges Chabot, Le Revermont, a study in physical geography;[24] Yves Chataigneau, La Vendée méridionale, a regional study;[25] Georges Reverdy (deceased), De la haute vallée du Thoré à la plaine de l'Aude, a study in human geography;[26] Mlle. Myriem Foncin, La culture et le commerce des fleurs et primeurs sur la Côte d'Azur, de Toulon à Menton;[27] M. Himner (deceased), Contribution à l'étude de la Podolie russe: Les méandres encaissés et les conditions du peuplement;[28] R. Capot-Rey, La dépopulation dans le Lot-et-Garonne;[29] Henri David,

[21] J. Vidal de la Blache: Étude sur la vallée lorraine de la Meuse, Paris, 1908.
[22] Charles Monchicourt: La région du Haut Tell en Tunisie, Paris, 1913.
[23] J. M. Tourneur-Aumont: Études de cartographie historique sur l'Alemanie: Régions du haut Rhin et du haut Danube du III[e] au VIII[e] siècle, Paris, 1918.
[24] *Ann. de Géogr.*, Vol. 22, 1913, pp. 399–416.
[25] Summary of one chapter, L'Émigration vendéenne, *ibid.*, Vol. 26, 1917, pp. 423–438.
[26] *Ibid.*, Vol. 26, 1917, pp. 175–188.
[27] *Ibid.*, Vol. 25, 1916, pp. 241–262.
[28] *Ibid.*, Vol. 25, 1916, pp. 116–123.
[29] *Ibid.*, Vol. 28, 1919, pp. 64–70.

Le vignoble bourguignon;[30] Mlle. Françoise Moreau, Sur les confins du Limousin et des Charentes: La vie rurale dans la région de Confolens et de Chabanais;[31] André David (deceased), La Montagne Noire;[32] E. Revert, La Forêt de Perseigne, a regional study;[33] Mlle. Andrée Choveaux, Le Morbihan;[34] Mlle. M. Basserre, La Planèze, a study in human geography;[35] André Lucius, Le vignoble alsacien.[36]

With this enumeration we hope to have characterized the group of university studies in geography which is the most important in France. It is evident that its activity remains chiefly directed towards regional and human geography, but that physical geography begins to play a rôle which cannot be ignored.

The Laboratoire de Géographie Physique of the Faculté des Sciences

There is at the University at Paris another center of geographical studies whose activities until now have unfortunately not been co-ordinated with those of the center that has just been discussed. In 1895 there were established in the Faculté des Sciences a chair and laboratory for physical geography of which the first incumbent and director was Professor Charles Vélain, a geologist known for his publications on St. Paul Island and on the Morvan. He was succeeded by Professor Louis Gentil, a geologist whose doctor's thesis is a description of the basin of Tafna in Algeria and whose reputation is mainly due to his exploration of part of the western Moroccan Atlas. Professor Gentil has published, besides an account of this exploration,[37] a small book on the physical geography of Morocco,[38] which is

[30] *Ann. de Géogr.*, Vol. 27, 1918, pp. 285–306.
[31] *Ibid.*, Vol. 29, 1920, pp. 182–198.
[32] A summary of the morphological section, Le relief de la Montagne Noire, appeared in *Ann. de Géogr.*, Vol. 29, 1920, pp. 241–260. The memoir in full was to appear in the course of 1923, forming a special volume of the *Bull. de la Soc. des Sci. Nat. de l'Aube.*
[33] *Ann. de Géogr.*, Vol. 29, 1920, pp. 306–310.
[34] A summary of one chapter, L'Influence des engrais marins sur les rives du Golfe du Morbihan, appeared in *Ann. de Géogr.*, Vol. 29, 1920, pp. 417–425.
[35] *Ibid.*, Vol. 30, 1921, pp. 257–270.
[36] *Ibid.*, Vol. 31, 1922, pp. 205–214.
[37] Louis Gentil: Explorations au Maroc (Mission de Segonzac), Paris, 1905.
[38] Louis Gentil: Le Maroc physique, Paris, 1912.

mainly an interpretation of the relief and certain concepts of which have become part of the permanent body of knowledge, particularly the conception of the Moroccan *meseta*. He prepared a geological map of Morocco, the second edition of which has just appeared,[39] and published numerous geological notes on this region. Since 1919 he has continued the work of Charles Vélain in the laboratory of physical geography.

The character of the teaching in this department is determined and its scope is defined by its position within the organization of the Faculté des Sciences. It does not lead to the *agrégation* but only to a *certificat* in physical geography, which counts towards the *licence ès sciences* but not towards the *licence ès sciences naturelles*, which is the only one that gives the right to a teaching position. For this reason the number of pupils is limited. The teaching, which deals particularly with geology applied to the interpretation of land forms, is supplemented by lectures in meteorology given by a physicist.

The collections include a library of several thousand volumes, numerous geological specimens, relief models and a laboratory for making models, several thousand lantern slides, a certain number of topographic and geologic maps, topographical and meteorological instruments, and a dark room for photography.

Theses for the *docteur ès sciences* degree have been prepared in the Laboratoire de Géographie Physique or else presented to the Faculté des Sciences of the University of Paris after agreement with the director of the Laboratoire. It was under these conditions that before the war the majority of the more notable theses were presented. Their topics follow: an attempt at the interpretation of the relief of a small region of France, such as the study of the Abbé Martin on the southern Jura;[40] investigations accompanied by topographical surveys in less known countries, such as the work of Emmanuel de Martonne on the Transyl-

[39] Louis Gentil: Carte géologique provisoire du Maroc, 1:1,500,000, Paris, 1920. The first edition, scale 1:2,500,000, was published with the article "La géologie du Maroc et la genèse de ses grandes chaînes," *Ann. de Géogr.*, Vol. 21, 1912, pp. 130–158.

[40] J. B. Martin: Le Jura méridional: Étude de géographie physique spécialement appliquée au Bugey, *Rev. de Géogr. Annuelle*, Vol. 4, 1910, pp. 1–219.

vanian Alps;[41] or even results of exploration in Africa, such as the book by Henri Hubert on Dahomey.[42]

The Laboratoire de Physique du Globe

Recently in the Faculté des Sciences a new course relating to geography has been introduced, namely one on the physics of the globe given by Charles Maurain, a physicist who is known for his work in electricity and who, after having taught at the University of Caen, was for several years before the war subdirector of the laboratory of aerodynamics at St. Cyr.

The Laboratoire de Physique du Globe has two observatories, one at the Parc St. Maur, equipped for meteorological observations, and the other at the Val Joyeux, equipped for the study of electricity. The work of this laboratory began in 1922. It has, like that in physical geography, the disadvantage of not preparing for any examination which falls within the system of secondary education and can therefore attract only disinterested workers. It is, however, probable that a group will gradually form around Professor Maurain.

Prospective Centralization of All Geographical Departments in One Building

The closer connection of the different centers of geographical studies at the University of Paris was arranged for more than ten years ago and would now have been an accomplished fact but for the war. To bring this plan to a realization the creation of an Institut de Géographie at the University of Paris was decided upon. The construction of the building began in 1914 and is now complete, but lack of funds has delayed equipping the interior. In this building will be united the Institut de Géographie of the Faculté des Lettres, the Laboratoire de Géographie Physique of the Faculté des Sciences, and the activities of the Laboratoire de Physique du Globe. When this union has been accomplished co-ordination of effort can be looked for

[41] See p. 27, note 5.

[42] Henri Hubert: Contribution à l'étude de la géographie physique du Dahomey, published under the title "Mission scientifique au Dahomey," Paris, 1907.

which cannot but be profitable to the students of both faculties. From it will doubtless result a still broader development towards physical geography of the French geographical school.

Geography at the Collège de France

There will nevertheless remain another independent center of geographical studies, namely the Collège de France.

Founded long before the establishment of the modern universities, the Collège de France has maintained its character of an institution of higher learning where the professors communicate the results of their researches or expound the principles of their own subject in public courses with no examinations or other obligations required of the auditors. A chair in human geography was there established in 1912 for Jean Brunhes through the liberality of A. Kahn, who at the same time founded a museum of photographs to serve as source material; this is under the direction of the incumbent of the chair.

A pupil of Vidal de la Blache, Jean Brunhes had taught for fifteen years at the University of Fribourg in Switzerland. He became known through his doctor's thesis on irrigation in the Mediterranean lands[43] and particularly by an important work on human geography[44] the second edition of which has just been exhausted and an American edition of which appeared in the United States.[45] He has since, in collaboration with Camille Vallaux, published a volume on the geography of history;[46] recently he has given us a geographical description of France which constitutes the first volume of the new History of France by Hanotaux,[47] the conception of which is entirely different from the celebrated "Tableau de la Géographie de la France" by Vidal de

[43] Jean Brunhes: L'irrigation, ses conditions géographiques, ses modes et son organisation dans la péninsule ibérique et dans l'Afrique du Nord, Paris, 1904.
[44] Jean Brunhes: La géographie humaine, Paris, 1910; 2nd edit., 1912.
[45] Jean Brunhes: Human Geography, An Attempt at a Positive Classification: Principles and Examples, transl. by T. C. LeCompte, edit. by Isaiah Bowman and R. E. Dodge, Chicago and New York, 1920.
[46] Jean Brunhes and Camille Vallaux: La géographie de l'histoire: Géographie de la paix et de la guerre sur terre et sur mer, Paris, 1921.
[47] Jean Brunhes: Géographie humaine de la France, Vol. 1 (forming, with "Introduction Générale," Tome 1 of Gabriel Hanotaux, edit.: Histoire de la Nation Française), Paris, 1920.

la Blache, which forms the corresponding introductory volume to Lavisse's History of France.

Jean Brunhes has the reputation of being a writer and an orator. He has attracted a large public to the Collège de France. This is an additional force for the current of human geography, which, in spite of all, remains the dominant one in France and at Paris.

CHAPTER V

GEOGRAPHY IN THE PROVINCIAL UNIVERSITIES

We have emphasized the Parisian center of university studies not only because it is the most important but because it characterizes the French geographical school. We have there explained the tendencies imposed by the system of organization, which is the same at all the universities.

Paris is no longer the only center of geographical studies. The influence of the teachers, who are for the most part pupils of Vidal de la Blache, is beginning to make itself felt in a number of provincial universities. The University of Grenoble is at present the most flourishing and active center. The inspirer of the work there is Raoul Blanchard. It will be easier to understand how he has made the most of a fortunate situation when we have reviewed the other universities where interesting types of work have been developed but where the same favorable set of circumstances is not present to the same extent.

University of Lille

The Faculté des Lettres at the University of Lille has a well-equipped Institut de Géographie, founded about thirty years ago by Professor Ardaillon, since elected rector of the University of Algiers. This institute was developed by Albert Demangeon during his stay at Lille. The contact between the university and the geographical society has become close, to the great benefit of both. A no less fruitful contact has been established with the Institut de Géologie of the Faculté des Sciences, and the establishment of a *certificat* for physical geography has attracted pupils from both faculties. The work of Demangeon's pupils, studies in local geography and particularly in human geography, has been published in summary in the journal of the Geographical Society of Lille (see p. 12, note 20).

No French university has suffered so much through the war as

Lille. The support for university activities came from the town itself, and what the fate of northern France has been is well known. Antoine Vacher, who followed Demangeon, died at the end of the war, and only recently has a successor been found in the person of Maximilien Sorre, recently of the University of Bordeaux. Maximilien Sorre is known from a very original doctor's thesis on the Mediterranean Pyrenees, a study in human geography based on a delimitation of biological environments to which reference has already been made.[1] His numerous publications deal particularly with human geography but also with climatology and vegetation. Recently he has published a little book on the French Pyrenees[2] which is the best description of these mountains according to modern geographical methods. At the University of Bordeaux he taught colonial geography.

At the same time the Faculté des Lettres of Lille has appointed J. Petit, who is completing a thesis on the northern Ardennes, as *chargé de cours* to give courses on the geography of northern France. There is thus at Lille all that is necessary to form an active center of geographical studies. When the situation at the university has become normal again, which cannot but be soon, Professor Demangeon's felicitous initiative will again begin to bear fruit.

University of Rennes

It was in 1899 that Emmanuel de Martonne, called to the University of Rennes, founded the laboratory of geography there. In a short time a center for local studies was formed; the excursions attracted professors and students from other universities. The *Travaux du Laboratoire de Géographie* appeared.[3] In 1905,

[1] See p. 30 and note 18 on that page.

[2] Maximilien Sorre: Les Pyrénées (in series: Collection Armand Colin No. 15), Paris, 1922.

[3] See Emmanuel de Martonne: Le Laboratoire de Géographie de l'Université de Rennes, 1902–1905, Rennes, 1905. The chief publications of the laboratory are: Emmanuel de Martonne: Le développement des côtes bretonnes et leur étude morphologique, 1903; Maximilien Sorre: Les pluies en Vendée, 1904; Emmanuel de Martonne and E. Robert: Excursion géographique en Basse-Bretagne (Monts d'Arrée-Trégorrois), 1904; E. Robert: Densité de la population en Bretagne, calculée par zones d'égal éloignement de la mer, 1905; J. Letaconnoux: La distance en temps entre l'intérieur de la Bretagne et la mer aux XVIII^{e}, XIX^{e}, et XX^{e} siècles, 1908.

Antoine Vacher, known for his thesis on the Berry,[4] followed Emmanuel de Martonne, who had been called to Lyons. In 1912 Professor Vacher left Rennes for Lille, and the successor at Rennes was not definitely appointed until 1918 in the person of René Musset. The disadvantage of these continued changes can be imagined.

René Musset, who has therefore now been at Rennes for six years, is the author of a substantial study, already mentioned, on the Bas Maine,[5] a monograph which has shown him as competent in the analysis of land forms as of economic life. He has contributed several important articles on the Perche [6] and also a paper on the breeding of horses in France.[7]

University of Lyons

The University of Lyons is one where the creation of a distinctive geographical school would seem to be most natural. The teaching of geography there dates back almost as far as it does in Paris. The throbbing life of the large city together with the possibility of varied excursions seemed favorable for the study of geography. It was this thought that decided Emmanuel de Martonne in 1905 to leave Rennes and succeed Lespagnol at Lyons. The latter, who was prematurely lost to science, nevertheless had been able to organize an admirably equipped geographical institute with a museum unrivaled to this day in any other university. Emmanuel de Martonne perfected its organization with regard to seminar work by considerably increasing its library, map collections, photographs, and instruments. A close contact had been established with the Club Alpin and the Geographical Society on the one hand and with the Chamber of Commerce on the other, also with the departments of geology, mineralogy, and botany of the Faculté des Sciences. A series of special courses in physical geography, mathematical geography, and commercial

[4] Antoine Vacher: Le Berry: Contribution à l'étude géographique d'une région française, Paris, 1908.
[5] See p. 30, note 20, first reference.
[6] René Musset: Le Perche, *Ann. de Géogr.*, Vol. 28, 1919, pp. 342–359; *idem:* Le relief du Perche, *ibid.*, Vol. 29, 1920, pp. 99–126.
[7] See p. 30, note 20, second reference.

geography had been established or grouped around the work of the geographical institute. The excursions increased in number. The work produced at the institute was published in the journal of the Geographical Society of Lyons [8] or in the *Annales de Géographie*.[9]

A center of local studies had thus developed rapidly when, on the retirement of Vidal de la Blache from teaching at the Sorbonne, the University of Paris called the professor at Lyons to be his successor, and he felt he could not refuse the call. His successor is Maurice Zimmermann, who was already professor at the commercial school of the Chamber of Commerce and *chargé de cours* for a course in economic geography at the Faculté des Lettres. Connected for several years with the editorial board of the *Annales de Géographie*, Maurice Zimmermann has continued until recently to prepare for this journal the "Chronique géographique"; he has thus, although specializing in problems of economic geography, closely followed explorations, particularly Polar explorations, whose results he has often discussed with great penetration.[10] He is a writer and a teacher. He has associated with himself since the war a young geographer, A. Cholley, who is the author of a good work on the Vôge [11] (the region at the foot of the Monts Faucilles scarp at the headwaters of the Saône) and whose thesis on the Pre-Alps of Savoy is almost finished. Teaching, rather than research, is at present emphasized at the University of Lyons.

University of Algiers

At the University of Algiers the situation has for a long time been the reverse. With E. F. Gautier and G. B. M. Flamand, the Faculté des Lettres and the Faculté des Sciences have each had, until the recent death of the latter, a professor of geography

[8] See p. 12, note 21.

[9] Eugène Locussol: Les régions naturelles du Velay, *Ann. de Géogr.*, Vol. 17, 1908, pp. 105; A. Cholley: La Vôge, *ibid.*, Vol. 23–24, 1914–1915, pp. 219–235.

[10] Maurice Zimmermann: L'océanographie du bassin polaire boréal d'après Fridtjof Nansen, *Ann. de Géogr.*, Vol. 13, 1904, pp. 97–112; *idem:* Le régime glaciaire au Groenland, d'après un ouvrage récent, *ibid.*, Vol. 7, 1898, pp. 441–456; *idem:* Quelques résultats de l'expédition antarctique belge, *ibid.*, Vol. 10, 1901, pp. 454–461.

[11] See note 9 above, second reference.

who devoted his activities less to his pupils, who indeed were few in number, than to personal investigation in the field.

G. B. M. Flamand, who entered In Salah with the first military expedition of penetration into the Sahara, was known through various articles on the geology and the physical geography of the Oran region and the Sahara. His most important work is a geological monograph on the southern Oran region.[12] But he had also discussed in a very interesting manner economic problems, in his "Pays du mouton" [13] and his work on the Wed Saura,[14] and even questions of nomenclature.[15]

E. F. Gautier, after a noteworthy thesis on the physical geography of Madagascar,[16] has specialized since his call to Algiers in the study of the Sahara and of the Atlas region. In addition to a large number of papers which appeared particularly in the *Annales de Géographie* or *La Géographie*, he has written an important volume on the Algerian Sahara;[17] recently he published a general discussion of the structure of Algeria [18] and a very stimulating synopsis on the geography of the region which, in the administrative terminology of Algeria, is called "Territoires du Sud."[19] Although devoting himself particularly to physical geography he has not neglected human geography. If he is a field worker he is no less a writer. He is also on occasion a delightful speaker. He was recently invited to Harvard University as visiting professor. At Algiers he has organized a geographical laboratory and has called to assist him in his teaching a young geographer, M. Larnaude, known for his publications on the Sahara.[20]

[12] G. B. M. Flamand: Recherches géologiques et géographiques sur le Haut-Pays de l'Oranie et sur le Sahara (Algérie et Territoires du Sud), Lyons, 1911.

[13] G. B. M. Flamand: Le pays du mouton, Algiers, 1893.

[14] G. B. M. Flamand: Aperçu général sur la géologie et les productions minérales du bassin de l'Oued Saoura (extract from "Documents pour Servir à l'Étude du Nord-Ouest Africain"), Algiers, 1897.

[15] G. B. M. Flamand: Essai de glossaire des principaux termes géo-hydrographiques arabes et berbères de l'Afrique du Nord, Algiers, 1909.

[16] E. F. Gautier: Madagascar: Essai de géographie physique, Paris, 1902.

[17] E. F. Gautier: Sahara Algérien (Missions au Sahara par E. F. Gautier et R. Chudeau, Vol. 1), Paris, 1908.

[18] E. F. Gautier: Structure de l'Algérie, Paris, 1922.

[19] E. F. Gautier: Les Territoires du Sud de l'Algérie: Description géographique (extract from "Les Territoires du Sud: Exposé de leur situation publié par ordre de Mr. Steeg, gouverneur de l'Algérie"), Algiers, 1922.

[20] E. F. Gautier and M. Larnaude: L'Oued Saoura, *Ann. de Géogr.*, Vol. 30, 1921, pp. 50–59; M. Larnaude: Excursion interuniversitaire en Algérie, *ibid.*, pp. 161–194.

There are now at the University of Algiers in spite of the regrettable loss of Flamand all the elements for the development of a center of local studies.

Other Provincial Universities

We will not go into greater detail in this review of the French universities at which geography is represented. Of the remainder the characterizations must be briefly summarized in a reference to the name and the works of the respective professors: at Nancy, Bertrand Auerbach, known for his description of the Lorraine plateau [21] and for his valuable survey of nationalities in the former Austro-Hungarian Empire;[22] at Bordeaux, Pierre Camena d'Almeida, an authority on Russian problems; at Montpellier, Jules Sion, to whose substantial works on human geography we have already referred (p. 30); at Clermont-Ferrand, Philippe Arbos, whose important work on pastoral life in the Alps is much valued;[23] at Strasbourg, Henri Baulig, who, to his numerous articles in the *Annales de Géographie* on the United States, has recently added keen analyses of the relief forms of Alsace and of the Vosges.[24]

We have attempted to characterize only those centers whose activities have been particularly devoted to geographical studies tending to the development of a school of local geography. From this review it will appear how circumstances have nowhere else been so constantly favorable as they have been in the development of the flourishing school at Grenoble.

University of Grenoble

The capital of the Dauphiny has among its advantages its situation in the heart of the Alps, a marvelous field for geographical experimentation; the keen intelligence of the inhabi-

[21] Bertrand Auerbach: Le plateau lorrain, Paris, 1893.
[22] Bertrand Auerbach: Les races et les nationalités en Autriche-Hongrie, Paris, 1898; 2nd edit., Paris, 1917.
[23] Philippe Arbos: La vie pastorale dans les Alpes françaises: Étude de géographie humaine, Paris, 1922 (see the author's paper based on this book: The Geography of Pastoral Life, Illustrated With European Examples, *Geogr. Rev.*, Vol. 13, 1923, pp. 559–575).
[24] Henri Baulig: Questions de morphologie vosgienne et rhénane, *Ann. de Géogr.*, Vol. 31, 1922, pp. 132–154 and 385–401.

tants of Savoy and of the Dauphiny, from whom it draws its student body; and the support which the townspeople extend to the university. Then, too, the young teacher who was appointed to organize the teaching of geography has been there without interruption for twenty years, carrying out with remarkable continuity a work which has proved itself to be particularly fruitful.

Raoul Blanchard became known through his doctor's thesis on Flanders,[25] a substantial study in regional geography which seemed rather to mark him for an appointment to the University of Lille, in which city he was teacher at the *lycée*. Called to Grenoble, he succeeded in adapting himself to a new environment in a very short time; and after a few years he began to publish studies on the physical geography of the Alps and then devoted himself more and more to problems of human geography, among which may be cited particularly his study of the moraines on the Rives threshold[26] and a small book on Grenoble.[27] An enthusiastic teacher, he has attracted a large number of students and knows how to inspire their work. An energetic organizer, he has created a well-equipped "Institut de Géographie Alpine" in which he has been able to interest local industrial circles. His excursions attract students and professors from foreign universities. Beginning his work just at the time when Emmanuel de Martonne left the University of Lyons for Paris, he has enlarged the field of his activities by extending it over all of southeastern France, including even the Massif Central.

He has been able to find the necessary funds to publish a journal under the name of *Recueil des Travaux de l'Institut de Géographie Alpine*, since changed to *Revue de Géographie Alpine*. A set of these annual volumes, illustrated by maps and photographs, constitutes a remarkable unit, without equal as evidence of the activity of a university geographical center. The essays for the *diplôme d'études supérieures*, instead of being only summarized, as is done elsewhere, are there published in full. Some

[25] Raoul Blanchard: La Flandre: Étude géographique de la plaine flamande, en France, Belgique et Hollande, Paris, 1906.

[26] Raoul Blanchard: Le seuil de Rives: Étude de morphologie glaciaire, *Zeitschr. für Gletscherkunde*, Vol. 6, 1911–1912, pp. 289–337.

[27] Raoul Blanchard: Grenoble: Étude de géographie urbaine, Paris, 1911.

of them are papers of real scientific merit, such as the study by Bénévent of the rains of southeastern France;[28] that by Allix of the Vercors [29] and also of the basin of Vizille;[30] and the studies by Pardé of the regimen of the Rhone [31] and of the mountain torrents of the Cévennes.[32] Blanchard has there also published the greater part of his own studies and has obtained several contributions from foreign workers, such as Jovan Cvijić.

The University of Grenoble is the only one which in recent years has awarded the title of *docteur ès lettres* for a thesis in geography.[33] It was here that Philippe Arbos presented his remarkable work on the pastoral life in the Alps,[34] although he was a pupil of the Sorbonne. Several of Blanchard's own pupils are at present preparing doctor's theses which will soon appear. We may refer to Bénévent, who is studying the climate of the French Alps; Pardé, who is expanding his investigation of the regimen of the Rhone; Allix, who is preparing a monograph on the alpine massif of the Oisans; and Blache, who is working on the Chartreuse and the Vercors.

It will be seen that this is indeed a complete school of local geography whose organization is as advanced as that of the Parisian school — a very rare circumstance in France, where rather excessive centralization is the rule. It is explained by favorable circumstances, of which a young teacher, who is gifted with special organizing ability, has made the most.

[28] E. Bénévent: La pluviosité de la France du Sud-Est, *Recueil des Trav. de l'Inst. de Géogr. Alpine*, Vol. 1, 1913, pp. 323–442.

[29] André Allix: La morphologie glaciaire en Vercors, *Recueil des Trav. de l'Inst. de Géogr. Alpine*, Vol. 2, 1914, pp. 1–185.

[30] André Allix: Vizille et le bassin inférieur de la Romanche, *Recueil des Trav. de l'Inst. de Géogr. Alpine*, Vol. 5, 1917, pp. 129–327.

[31] Maurice Pardé: Le régime du Rhône à Beaucaire, *Recueil des Trav. de l'Inst. de Géogr. Alpine*, Vol. 7, 1919, pp. 309–368.

[32] Maurice Pardé: Les phénomènes torrentiels sur le rebord oriental du Massif Central, *Recueil des Trav. de l'Inst. de Géogr. Alpine*, Vol. 7, 1919, pp. 1–199.

[33] The University of Bordeaux awarded only the *doctorat d'université* to Jacques Levainville for his work: Le Morvan: Étude de géographie humaine, Paris, 1909.

[34] See p. 42, note 23.

CHAPTER VI

GOVERNMENT DEPARTMENTS CONTRIBUTING TO GEOGRAPHY

A review of the status of geography in France would not be complete if mention were not made of the government departments whose activities contribute to the development of geographical knowledge either through work which adds directly to this knowledge or by providing investigators with indispensable means of research.

Service Géographique de l'Armée

In the first rank should be mentioned the Service Géographique de l'Armée, which is under the Ministry of War, the director, the heads of departments, and a part of the employees being military men.

Its main duty is to furnish to the General Staff the topographic maps on all scales necessary for the conduct of military operations, maps whose compilation and reproduction must be given the greatest scientific precision and accuracy. Its particular task is the survey of French territory, including Algeria and Tunis, and the publication of maps of this territory. The Service receives large appropriations whose productive power is increased by the fact that all the technical staff are military men, particularly the field workers, and their pay is therefore taken care of by the ordinary expenses of the War Department. The budget of the Service Géographique de l'Armée amounted in 1920 to about 3,000,000 francs.

The office and central headquarters occupy their own rather extensive buildings at 136–140 Rue de Grenelle, Paris, and other offices at the Hôtel des Invalides. There are three divisions: geodesy, topography, and cartography. Geodetic and topographic parties are formed every year for field work in France,

Algeria, and Tunis. Some of these can be placed at the disposal of the colonies that have their own topographic survey. The Service Géographique du Maroc is in particularly close connection with the Service Géographique de l'Armée at Paris.

There is nothing in France which can be compared with the Service Géographique de l'Armée as a map establishment. The most modern machinery is installed there for map printing. The photographic reproduction and heliogravure plants are capable of rapidly producing plates of the largest dimensions. The engraving and drafting divisions, whose personnel consists of civilians, include craftsmen of proved skill who are hired as the result of a competitive examination and are trained in a special school. The Service Géographique de l'Armée does not do work for private firms as did, for instance, the Military Geographical Institute at Vienna, and does not even conduct the sale of its maps, which is turned over to distributors with whom a special contract is made.

Although created to meet the essential needs of the army, the Service Géographique is none the less conscious of the usefulness of its activities to geographical science and to the life of the nation. It alone is able to furnish to civil engineers the detailed surveys that they need. It alone produces the topographic maps from which are derived all published maps and without which geographical, geological, and other studies are impossible.

The directors of the Service Géographique de l'Armée have always kept in touch with scientific circles. Thus, a "Commission Centrale des Travaux Géographiques" was established to advise in the preparation of the new map of France in 1:50,000. This map in colors, which is intended to replace the black map of the General Staff in 1:80,000, is one of the most beautiful specimens of modern topographical cartography. The production cost of its sheets, which are printed in 12 colors, with contours, relief shading, and symbols for the different types of cultivated areas and means of communication, is unfortunately very high. The map so far only covers the eastern frontier and

the environs of Paris. The original surveys in 1:20,000 have been on sale for three years.

At present experiments are being undertaken in the use of aerial photography and methods of photographic surveying in order to push forward more rapidly the revision of the whole map of France. Colonel A. Bellot, the present director of the Service Géographique de l'Armée, has recently (July, 1923) succeeded in working out a simplified type of the new map in 1:50,000, the 1:20,000 surveys for which and the map itself can be completed for the whole of France within twenty years. All French geographers are undertaking to exert the utmost influence on public opinion in order to get the legislative body to grant the necessary funds.

We need not enumerate here the series of maps published by the Service Géographique de l'Armée; these are described in the annual catalogue. We desire merely to give an idea of its activity. For the sake of completeness let us add that the Service Géographique de l'Armée in addition to maps produces relief models. A special workshop under the direction of an officer has been established in the Hôtel des Invalides. Models of the most striking sheets are there exhibited and constitute a very interesting museum. During the war the production of relief models became as great a need as the production of maps and to a certain extent was industrialized. The whole western front, i.e. a strip of country extending from the North Sea to the Vosges, was modeled on the scale of 1:20,000. This constitutes an extremely valuable collection for geographers. The molds have been preserved, making it possible to duplicate these models at a reasonable price for educational institutions.

The Service Géographique de l'Armée has always been a center of theoretical studies, even while it was carrying out practical aims. The officers who direct the field topographers have always been keenly conscious of the need of instructions that would be more than mere technical directions and would lead to an intelligent rendering of land forms, without which the most accurate methods cannot give good results. Thus these officers

have been led to studies in physical geography from which have resulted publications that count among the most important productions of the French geographical school.

General de La Noë, in order to enhance the value of his researches, associated with himself a then young geologist, Emmanuel de Margerie; and from their collaboration there resulted a work noteworthy for the accuracy of its method and for its new and substantial conclusions, "Les Formes du Terrain."[1] Later General Berthaut, having in turn become the director of the Service Géographique de l'Armée, took up and attempted to advance the studies of his predecessor by utilizing the progress of geological researches and the map material that had accumulated through the detailed topographical surveys. From these efforts resulted two works of considerable magnitude, less original than the work of de La Noë and de Margerie, but still noteworthy for the wealth of sources used and the large number of illustrations.[2] Both of these works were printed by the Service Géographique de l'Armée itself.

To the same policy is due the publication of the *Cahiers du Service Géographique de l'Armée*, a series of pamphlets in which are reproduced and discussed the original relief surveys of the most interesting sheets of the map of Algeria, with transparencies of the structure of the region which the officers are directed to prepare in the field. The requirement of plotting the direction of outcrops and the dip of strata forces the topographer to open his eyes to the influence of structure; one cannot but be impressed by the value of this in producing a more faithful and expressive rendering of the land forms. These *Cahiers*, which are really only intended for the instruction of topographic parties, have never been placed on sale, nor has the "Topologie" of General Berthaut; nevertheless, the *Cahiers* are distributed to university geographical institutes or laboratories. General Berthaut's "Topologie" has also been distributed to foreign universities.

[1] G. de La Noë and Emmanuel de Margerie: Les formes du terrain, 1 vol. and atlas, Paris, 1888.

[2] H. M. A. Berthaut: Topologie: Étude du terrain, 2 vols., Paris, 1909; *idem:* Connaissance du terrain et lecture des cartes, Paris, 1912.

The Hydrographic Office

The Service Géographique de l'Armée is not the only government service doing work of interest to geography. The Ministry of Marine includes a Service Hydrographique, which is charged with the study of the coasts and coastal waters. Like the Service Géographique de l'Armée, this institution carries out surveys in the field and publishes maps. It has no engraving and printing plant of its own but makes use of private firms under contract. Its activities are thus more exclusively scientific than those of the Service Géographique de l'Armée. The fact that the corps of hydrographic engineers is recruited from the graduates of the École Polytechnique insures the permanence of a technical staff of high scientific attainments; the staff is composed of naval officers, together with some fifty civilian employees. Besides the survey of the coasts the Service Hydrographique includes among its tasks the study of marine meteorology and of instruments.

A hydrographic survey party on its own vessel works every year on the French coasts. Special parties are organized, besides, for the necessary surveys of the coasts of the colonies. The coast charts, which are very finely engraved on copper and are always kept up to date, are not the only productions of the Service Hydrographique. It also publishes "Instructions Nautiques," which is intended for navigators but whose general chapters often include important information on meteorology and oceanography. It also publishes a journal, the *Annales Hydrographiques*, in which are discussed not only technical questions relating to instruments and surveying methods but also problems of more general and more geographical interest; these include particularly studies of ocean currents and meteorology. In this series appeared the noteworthy studies of A. Froc on the atmosphere of the Far East.[3]

Various Geographical Government Bureaus

In addition there are in the various ministries bureaus bearing the name of Service Géographique, but these are mainly bureaus

[3] Aloys Froc: L'atmosphère en Extrême-Orient pendant les six mois froids, son état normal, ses perturbations, *Annales Hydrogr.*, Ser. 2, Vol. 23, 1901, pp. 117–197.

charged with the preparation of maps from other maps and relevant documents rather than from actual surveys in the field.

The Ministry of the Colonies includes under the name of Service Géographique a bureau where certain general maps are compiled. In each of the colonies themselves, however, there are organized, according to local needs and resources, topographical surveys whose corps and the larger part of whose technical staff are generally trained by officers who have spent some time at the Service Géographique de l'Armée at Paris.[4]

The Service Géographique of the Ministry of Foreign Affairs is also only a map-compiling bureau. The cadastral survey is under the Ministry of Finance, except for the fact that the cadastral survey of the regions devastated during the war is under the Ministry of the Liberated Regions. In this bureau the methods of photographic surveying and the use of aerial photography have been studied and recently put into practice.

The Geological Survey of France

The Service de la Carte Géologique is, in France, a bureau completely separated from the bureau which produces the topographic maps, although these are indispensable as the base for the geological survey. It is a subdivision of the Ministry of Public Works, and its director is a mining engineer (at present, M. Pierre Termier). The members of its staff have the title "collaborateurs" and are indeed not officials attached exclusively to the Geological Survey but professors, engineers, or individual scientists, who are reimbursed only for their studies in the field. The engraving and printing of the maps have so far been turned over to commercial firms; it is probable, however, that the Service Géographique de l'Armée will do this work in the future. One who is not familiar with the facts will be astonished to learn how small is the budget of this important bureau when he sees spread before him the results of its fruitful activity: all of France surveyed and published on the scale of

[4] The Service Géographique of Indo-China has surveyed and published, in 1:100,000, a map covering all of Tonkin. The Service Géographique of Madagascar has surveyed the greater part of the island on the scale of 1:200,000.

1:80,000 and an imposing collection of bulletins and memoirs, including works that have been epoch-making.

Geographical Bureaus of the Ministry of Agriculture

Among other official bureaus whose contributions are of great interest to geography should be mentioned the Direction de l'Hydraulique et des Améliorations Agricoles, which is under the Ministry of Agriculture. It is due to the initiative of this bureau that there has been undertaken a comprehensive investigation of water power, whose results, published at regular intervals, constitute a formidable collection of documents. This series gives the run-off and the profiles of nearly all the streams in the Alps and Pyrenees.[5] Some of the volumes are illustrated by maps in 1:50,000, the base for which is derived from maps of the Service Géographique de l'Armée.

Under the jurisdiction of the Ministry of Agriculture there is also an Administration des Eaux et Forêts, whose officers prepare the forest management maps in 1:5000 and which has published a forestry atlas in 1:320,000.[6]

The Direction de l'Agriculture of the Ministry of Agriculture undertakes the investigation of agricultural products; the results are published, sometimes accompanied by an atlas. The most important is that which was published in 1897.[7]

Geographical Publications of the Ministry of Public Works

It would take us outside the province of this discussion to enumerate the different statistical bureaus and their publications, but reference should be made to the geographical initiative of

[5] These publications first appeared in the *Annales du Ministère de l'Agriculture*, constituting two series: (1) that of the Comité d'Études Scientifiques, which includes the water, glacial, and soil studies; and (2) that of the Service d'Études des Grandes Forces Hydrauliques, which deals with the Alps. This latter series has become independent and at present includes some forty volumes. A third series has begun to appear, on the Pyrenees.

[6] Statistique et atlas des forêts de France, Direction Générale des Eaux et Forêts, Ministère de l'Agriculture, 2 vols., Paris, 1912.

[7] Atlas de statistique agricole: Resultats généraux des statistiques agricoles décennales de 1882 et de 1892, Direction de l'Agriculture, Ministère de l'Agriculture, Paris, 1897.

the Ministry of Public Works, which published for some years an album of graphic statistics which has unfortunately ceased to appear.[8]

Institute of Urban History, Geography, and Economics

Finally let us call attention to the creation by the city of Paris of an Institut d'Histoire, Géographie et Économie Urbaines. This institution, under the direction of Marcel Poète, is entrusted with the preservation of all documents dealing with the history of Paris and with the study of all questions concerning the growth of the city from an historical, geographical, or economic standpoint. It possesses a remarkable library, organizes courses in civics, and publishes under the title of *La Vie Urbaine* a well-illustrated journal in which geography occupies a large place.

Proposed Co-ordinating Bureau

We have dealt mainly with bureaus which produce maps. It has been noted how diverse are their functions. The idea of uniting them in order to obtain more economical results has already been discussed on several occasions. At first the Commission Centrale des Travaux Géographiques, created by ministerial decree in 1891, was to carry out this project. The Commission consisted of representatives of all the Ministries, but its activity soon became limited to a study for a program of a new map of France, then slowed down, and finally ceased altogether. The Comité National de Géographie, to whose complete authoritativeness and relative independence of official connections we have referred above, has taken up this question again and considered the creation of a national institute or office of geography whose nucleus would probably be the Service Géographique de l'Armée.

[8] Album de statistique graphique, Ministère des Travaux Publics, Paris, 1906–1907.

CHAPTER VII

THE LEADING GEOGRAPHICAL JOURNALS AND SERIES

The reader who has followed us to this point in this systematic discussion is amply informed about the various aspects of geographical activities in France. We have endeavored to make plain what may be expected from these activities by indicating what they have accomplished during the last thirty years, by showing for what reason they are oriented in this or in that direction, and of what new developments they seem capable.

How can these developments be followed? This is the last question, which we shall try briefly to answer.

There are at present in France three or four journals which must be included in every geographical bibliography.

Annales de Géographie

The *Annales de Géographie* was founded in 1892 by the publishing house of Armand Colin, which entrusted its editorship to Paul Vidal de la Blache, assisted by Marcel Dubois, later by Lucien Gallois and Emmanuel de Margerie. After the death of the great geographer who had established its success, Emmanuel de Martonne and Albert Demangeon became members of the editorial board. The secretary of the editorial committee up to the war was Louis Raveneau, who at the same time edited the *Bibliographie Géographique Annuelle*, which was published as a free supplement.

All the pupils of Vidal de la Blache, that is to say practically all of the professors of geography at the universities and *lycées* of France, were collaborators on the *Annales de Géographie*. Explorers have more than once published the results of their expeditions there. But it is mainly the work of the French school of university geographers, increasingly better organized, which is reflected in this review. In its pages can be seen the reason for

the unity in point of view, in method, and, one may say, in attitude, which give it its value. Geologists like Marcel Bertrand, de Lapparent, Termier, and Lugeon, meteorologists like Angot, botanists like Bonnier and Flahault, hydrologists like Tavernier and Lemoine have brought to it the fruits of their experience. It may be said that no important geographical work has been done in France whose author has not made it a point to publish in the *Annales de Géographie* his first results or a discussion of which with references to the source material has not appeared in the *Annales* from a competent pen. A large number of local studies on French regions have appeared in its pages. The thirty volumes of the *Annales de Géographie* give a true picture of the development of the modern geographical school, with its tendency towards regional geography, at once scientific and interesting, with its predilection for human geography, while at the same time not inhospitable to researches in physical geography.

The Annual Geographical Bibliography

Publication of the *Annales de Géographie* was interrupted during the first year of the war; it has since continued without any deterioration in the quality of its articles; but the annual geographical bibliography published as a supplement received a harder blow, from which it recovered with difficulty. After the first two or three years this bibliography had, owing to the work of its editor, acquired steadily greater authority. The impeccable accuracy of its references, the careful selection of the publications discussed, the accuracy and impartiality of the critiques condensed in 10 to 30 lines, made it a working tool without a rival. As the house of Armand Colin felt unable to resume this publication after it had been interrupted, the Association de Géographes Français decided to fill the gap, which was being keenly felt by all workers in geography. The Association has succeeded in again bringing together the collaborators and in procuring the necessary funds for printing, which is very expensive. As already stated, two volumes have

appeared, covering concisely the production of all the back years;[1] and, beginning with 1923, the *Bibliographie Géographique* will again present the reviews of the preceding year.

La Géographie

Under the title of *La Géographie* a review began to be issued in 1900 by the publishing house of Masson. This was supported by a subsidy from the Société de Géographie of Paris, which took over its editorship and made it the successor to its bulletin. *La Géographie* consisted of twelve monthly issues, constituting two volumes a year, and containing original articles, a series of notes entitled "Mouvement Géographique," and, under the heading "Actes de la Société de Géographie," the minutes of its lectures and formal meetings, i.e. practically the material of which the numbers of its former *Comptes Rendus* consisted. Charles Rabot, secretary of the editorial committee, had been able to enlist for *La Géographie* the collaboration of real geographers, geologists, and explorers. His "Mouvement Géographique" deserved to be followed and brought many interesting facts relating to physical geography. The original articles dealt with explorations more often than did those in the *Annales de Géographie*.

After the war, which interrupted its regular publication, *La Géographie* underwent a change, the Society taking over its publication into its own hands. The format was reduced, and the "Mouvement Géographique" was discontinued. The original articles are now fewer, and more space is devoted to a bibliography of the same type as that in *Petermanns Mitteilungen*, wherein, as previously mentioned (p. 8), the works and periodicals acquired by the library of the Society are reviewed or cited as they are received.

Revue de Géographie Annuelle

A *Revue de Géographie* had been founded before the *Annales de Géographie* by Ludovic Drapeyron and published by the publish-

[1] See p. 17, note 30.

ing house of Delagrave. Its founder in his will established a fund to insure its continuation, and the house of Delagrave asked Professor Charles Vélain, director of the Laboratoire de Géographie Physique of the Faculté des Sciences of the University of Paris, to be its editor. He realized that here was an opportunity for a distinctive undertaking, as the Société de Géographie had given up publishing memoirs and the articles in *Annales de Géographie* were not over thirty pages long. Thus was founded the *Revue de Géographie Annuelle*, each volume of which contains a memoir of several hundred pages and a number of original papers of less extent. It has published some of the most important studies in physical geography which the French geographical school has produced in the last twenty years; for instance, the studies in the evolution of the Transylvanian Alps by Emmanuel de Martonne[2] and of the plains of Poitou by Passerat,[3] the study of Abbé Martin on the southern Jura,[4] and recently an important work by Bourcart on the geology and geography of Albania.[5] Its publication, which had been interrupted during the war, has been resumed, Professor Vélain associating with himself on the editorial board MM. Louis Gentil and Pierre Girardin.

Revue de Géographie Alpine

We have already referred to the *Revue de Géographie Alpine* published in Grenoble by Professor Blanchard. Like its predecessor, the *Recueil des Travaux de l'Institut de Géographie Alpine*, it ingeniously incorporates matter already set up in type for the journal of a local scientific society. The works of pupils of the director make up the body of the review, but there are articles from the pens of foreign investigators, such as Jovan Cvijić, G. Anfossi, W. H. Hobbs, etc. We have already referred (p. 44) to the papers which give this series its value.

[2] See p. 27, note 5.
[3] See p. 30, note 19.
[4] See p. 33, note 40.
[5] Jacques Bourcart: Les confins albanais administrés par la France (1916–1920), *Rev. de Géogr. Annuelle*, Vol. 10, 1922, Fasc. 1, pp. 1–307.

Bulletin de la Section de Géographie

Among geographical periodicals attention should also be called to the *Bulletin de la Section de Géographie* of the Comité des Travaux Historiques et Scientifiques, to the official rôle of which in the Ministry of Public Instruction we have already referred (p. 14). This journal, printed by the Imprimerie Nationale and not sold commercially, is distributed by the Ministry. In principle it is reserved to the minutes of the Section de Géographie and of the Congrès des Sociétés Savantes; it also publishes a number of accounts of scientific missions. In its pages, therefore, may be found a number of important articles or memoirs (see p. 15); but the bulk of its space is devoted to historical geography or to studies in local nomenclature.

Publishers of Geographical Works

By following the periodicals here discussed or even by limiting oneself to the *Annales de Géographie* and to the *Bibliographie Géographique* of the Association de Géographes Français, one will run little risk of missing anything essential in geographical activities in France. It may nevertheless be useful to know which are the principal firms that publish geographical works. There are some that have established certain series or even miniature libraries devoted more or less exclusively to geography.

Librairie Hachette

The Librairie Hachette has long had the reputation for being a geographical center. It used to publish a popular periodical, *Le Tour du Monde*, which brought out detailed accounts or abridged translations of all exploratory expeditions. It was the first firm to organize a map department; this was directed by F. Schrader, who was at the head of a corps of skillful draftsmen. This firm published the great "Géographie Universelle" of Elisée Reclus in 18 volumes,[6] the "Dictionnaire de Géographie" of Vivien de St. Martin,[7] the "Dictionnaire de la France,"[8] etc.;

[6] Elisée Reclus: Nouvelle géographie universelle, 18 vols., Paris, 1875–1893.
[7] Louis Vivien de St. Martin: Nouveau dictionnaire de géographie universelle, 7 vols. and 2 supplements, Paris, 1879–1900.
[8] Paul Joanne: Dictionnaire géographique et administratif de la France, 7 vols., Paris, 1890–1905.

and also the large general atlas of Vivien de St. Martin and Schrader [9] containing 80 maps in folio size, finely engraved in copper according to the original documents—a monumental work which is far superior to the best similar atlases in many countries, notably the United States. These great works belong to the past. The activities of the Librairie Hachette have since turned towards other aspects of geography. The *Tour du Monde* has ceased publication. A cartographical publication of real value, *L'Année Cartographique*, to which Emmanuel de Margerie made important contributions, has been interrupted. The admirable "Tableau de la Géographie de la France" by Vidal de la Blache appeared as the introductory volume to the "Histoire de France" by E. Lavisse,[10] and its success caused it to be published in a special illustrated edition;[11] but very few works of this style followed. New editions of Elisée Reclus and popular and abundantly illustrated works from facile pens have been issued to meet the taste of the public.

ARMAND COLIN

The firm of Armand Colin, which has published the "Atlas Vidal de la Blache" and the "Traité de Géographie Physique" by Emmanuel de Martonne and continues to issue the *Annales de Géographie*, has also published during the last twenty years the majority of the great regional studies, already mentioned, which were presented as doctor's theses. To this series in octavo format belong the volumes on Wallachia by de Martonne, on Picardy by Demangeon, on Flanders by Blanchard, on the peasants of eastern Normandy by Sion, on the Bas Maine by Musset, on the Mediterranean Pyrenees by Sorre, on central Tunis by Monchicourt, on pastoral life in the French Alps by Arbos, and also "La France de l'Est" by Vidal de la Blache.[12]

[9] Louis Vivien de Saint Martin and F. Schrader: Atlas universel de géographie, 80 sheets, Paris, 1877–1912; new edition (nouvelle édition conforme aux traités de paix de 1919–1920), Paris, 1923.

[10] Ernest Lavisse: Histoire de France, depuis les origines jusqu'à la Révolution, Vol. 1: Tableau de la géographie de la France, by Paul Vidal de la Blache, Paris, 1903.

[11] Paul Vidal de la Blache: La France: Tableau géographique, Paris, 1908.

[12] Paul Vidal de la Blache: La France de l'Est (Lorraine-Alsace), Paris, 1917.

In a series of somewhat smaller format have appeared the studies on the natural regions and *pays* names by Gallois, on the Lorraine Meuse by Captain J. Vidal de la Blache, on Rouen by Levainville, and on Grenoble by Blanchard.

Recently a "Collection Armand Colin" has been begun, a duodecimo series which includes a geographical section. The small books that have appeared in this series are general statements of large questions, distinguished by the author's fundamental knowledge of the subject and the clearness and conciseness of exposition.[13] Economic geography occupies the first place.

A New Work of Regional Geography

The greatest enterprise in descriptive geography since the "Géographie Universelle" by Elisée Reclus is the new regional geography, the task of publishing which the house of Armand Colin had assumed before the war. It was to appear under the editorship of Vidal de la Blache. The master of the French geographical school had outlined with a sure hand the plan for this great work in 12 quarto volumes and had gathered about him for its realization his best pupils. In order to insure unity of method he had decided to assign each volume to one author. The division was as follows: L. Gallois was to discuss France (1 vol.); A. Demangeon, the British Isles, Belgium, and Holland (1 vol.); M. Zimmermann, the Polar regions and Scandinavia (½vol.); E. de Martonne, Central Europe (1 vol.); J. Brunhes, the Mediterranean peninsulas (1 vol.); P. Camena d'Almeida, European and Asiatic Russia (1 vol.); F. Grenard and R. Blanchard, Central and Western Asia (½ vol.); J. Sion, Monsoon Asia (1 vol.); P. Privat-Deschanel, Australia and Oceania (½ vol.); E. de Margerie and H. Baulig, North America (1 vol.); P. Denis and A. Vacher, South America and Central America (1 vol.);

[13] No. 15, Maximilien Sorre: Les Pyrénées, Paris, 1922; No. 18, Fernand Maurette: Les grands marchés des matières premières, Paris, 1922; No. 19, Jacques Levainville: L'industrie du fer en France, Paris, 1922; No. 23, Henri Cavaillès: La houille blanche, Paris, 1922; No. 25, Georges Hardy: Vue générale de l'histoire d'Afrique, Paris, 1922; No. 35, Charles Maurain: La physique du globe, Paris, 1923; No. 36, Jules Rouch: L'atmosphère et la prévision du temps, Paris, 1923.

Augustin Bernard, Northwest Africa (1 vol.); and F. Maurette, Southeast Africa (1 vol.).

The war not only stopped the publication of this work but even the activities of its authors. One died, Antoine Vacher. The uncertain duration of territorial changes, the instability and obscurity of the economic situation would have made it necessary to delay preparation of an account of the modern world, even if the group of geographers selected for this work had not been disconcerted by the loss of their master. They have agreed to intrust to their dean, L. Gallois, the task of leading and directing the necessary efforts to realize Vidal de la Blache's original plan.

It is now settled that the first volume will appear in 1924. It will be the volume by Demangeon on the British Isles, Belgium, and Holland.

Other Geographical Publishers

In what precedes it was our aim to call attention to a publishing house which formerly specialized in geographical publications and a house which is at present doing so. We cannot include in this account a discussion of all French publishing houses that issue geographical works. Such a house as Masson, which specializes in medical publications, has, nevertheless, published the guide-books edited by Marcellin Boule, small volumes which deal with the particularly picturesque departments of the Massif Central and of the Alps and which are of great value to the geographer.[14] Such a firm as Alcan, which specializes particularly in philosophy, has also published Brunhes's "La Géographie Humaine" and Augustin Bernard's "Le Maroc." A firm known for its mathematical publications, Gauthier-Villars, has published the great work on the Alps by P. Helbronner. A publisher who has become known for his numerous publications on the war, Payot,

[14] Guides du touriste, du naturaliste et de l'archéologue: Collection publiée sous la direction de Marcellin Boule (Le Cantal, by Marcellin Boule and Louis Farges, Paris, 1898; La Lozère: Causses et Gorges du Tarn, by Ernest Cord, Gustave Cord, and Armand Viré, 1900; Le Puy-de-Dôme et Vichy, by Marcellin Boule, P. Glangeaud, Rouchon, and A. Vernière, 1901; La Haute-Savoie, by Marc Le Roux, 1902; La Savoie et Aix-les-Bains, by J. Révil and J. Corcelle, 1903; Le Lot: Padirac, Rocamadour, Lacave, by Armand Viré, 1907; La Haute-Loire et le Haut-Vivarais, by Marcellin Boule, 1911; Les Alpes de Provence, by M. Tardieu, 1912).

also published Demangeon's "Le Déclin de l'Europe" and announces the publication of a geographical series under the direction of Brunhes and Emmanuel de Martonne.

It is worth while, however, to call attention to the fact that there are also publishing houses which specialize in colonial geography, such as Challamel and Larose.

Map Publishers

It may possibly seem strange that there is no publishing house in France devoting itself exclusively to geographical publications. On the other hand, there are several firms devoted exclusively to the publication of maps. H. Barrère published the map of France in 1:400,000 by the Touring Club of France. He published also the greater part of the precise surveys of the Alps and the Pyrenees due to the initiative of the civil topographers who are members of the Commission de Topographie of the Club Alpin.

CHAPTER VIII

CONCLUSION

We have attempted to acquaint the reader with the status of geographical activities in France under all their aspects by tracing the origins of those tendencies whose effects we are at present experiencing, by explaining the distinctive characteristics of the French geographical school, and by giving all the practical indications which are necessary to orient oneself in the mass of publications and to keep abreast of the developments of our science.

The Frenchman, who often accuses himself of being ignorant of geography, really attaches great importance to the subject, the proofs of which are the place he assigns to it in all stages of the educational system and the large number of geographical societies and geographical publications existing in the country.

Up to the end of the nineteenth century French geographers were book scholars—historians and mathematicians. It is from the period of exploration, to which Frenchmen have largely contributed, that the spread of interest in modern geography dates. The development of the geographical societies reflects this movement. These societies, of which the Société de Géographie of Paris is the most important, have played and still play a useful rôle, but the establishment of a true geographical school in France was not possible until the day when geography became a part of the curriculum of the universities. The organization of these universities has asserted an influence on the orientation of geographical studies by placing geography in the Faculté des Lettres; it has impressed upon it less of a natural-science character, which has its inconveniences and disadvantages. The French geographical school is distinguished by the quality of form, which does not exclude rigorous thinking; it is directed principally toward regional or descriptive geography and toward human geography. The unity of its aims has in great part been

due to the influence of the personality of Vidal de la Blache. Nevertheless, gradual changes may be noted: in most of the universities the character of instruction is turning more and more towards the natural-science phase, and works in physical geography are multiplying. At present the material equipment is suited to research in all branches of geography. The most important center is of course Paris, but Blanchard has been able to create a very vital center at Grenoble.

As in all other great modern states, geography benefits in France by the activities of a large number of government institutions. The principal map-producing organization, the Service Géographique de l'Armée, has at the same time been a center of scientific studies dealing with geomorphology, just as the Service Hydrographique de la Marine has, in the *Annales Hydrographiques*, published important contributions relating to climatology and oceanography.

Although no publishing house has exclusively specialized in geographical works, French geographical literature is quite abundant. After the "Géographie Universelle" of Reclus a great geographical series will appear whose plan was outlined and whose controlling ideas were determined by Vidal de la Blache. Several French geographical periodicals can be cited as among the best in existence. The *Annales de Géographie* is on the shelves of all great scientific libraries. The *Bibliographie Géographie Annuelle*, which was published as a supplement to that journal and whose publication has been resumed by the Association de Géographes Français after an interruption caused by the war, gives the best review of geographical publications from all parts of the world.

The distinctiveness of geography in France will certainly tend to disappear as international scientific relations increase by means of congresses with excursions, exchange of publications, and the already established exchanges of university professors. This account will possibly later have historical value in defining a stage in the evolution of our science. May it at least render service to American and other geographers who wish to become better acquainted with the present situation of geography in France.

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