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## STATUS OF RESEARCH IN AMERICAN GEOGRAPHY

*One of a series of ten reports prepared by  
Committees of the Division of Geology and  
Geography, National Research Council, under  
contract with the Office of Naval Research*

Contract N7onr-29124

### HISTORICAL GEOGRAPHY

Andrew H. Clark,  
Chairman

DIVISION OF GEOLOGY AND GEOGRAPHY  
NATIONAL RESEARCH COUNCIL  
WASHINGTON, D. C.

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Andrew H. Clark, Chairman  
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J. Russell Whitaker

Division of Geology and Geography

National Research Council

This is one of ten reports prepared to evaluate and  
describe the current status and future potential of  
research in various fields of American Geography.  
The coordinators of the study were Preston E. James  
and Clarence F. Jones

National Academy of Sciences - National Research Council

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## HISTORICAL GEOGRAPHY<sup>#</sup>

Geographers now seem to be in general agreement that historical geography is the study of the geography of the past and of geographical changes through time. Such is the point of view of this essay. We are keenly aware, however, that this agreement, if general, is recent and by no means clearly reflected in much of what has been done under the name of historical geography even in the past half-century. A detailed examination of substantive and methodological writings suggests that, among social scientists in general, including many geographers, there is some confusion, if not positive disagreement, regarding the scope of the study. A number of points need clarification before we proceed.

### SCOPE OF HISTORICAL GEOGRAPHY

Any geography of the past is historical geography, whether regional or topical, cultural or physical. It does not, therefore, represent a separate subject-matter field like plant geography or economic geography. It is of particular importance that we recognize that historical geography is not

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<sup>#</sup> The committee which prepared this chapter worked thus: the chairman wrote each successive draft which was then submitted to each committee member for criticism and editing. Although the basic plan, the bias, and the final decisions and wording are all those of the chairman, the contribution of the others has been large. The committee included: Andrew Clark, chairman; Herman R. Friis, Preston E. James, Clarence F. Jones, Dan Stanislawski, and J. Russell Whitaker.

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limited to past cultural regional geography, with which it has sometimes been equated.

### The Beginning and the Ending of Studies in Historical Geography

The problem of the limits in time within which studies of past geography may fall has greatly disturbed many who have thought or written of historical geography. "When may we begin?" and "What distinguishes the geography of the recent past from that of the present?" are the forms the question usually takes.

To insist that historical geography begins where history, as opposed to pre-history, begins would assume some inherent necessity for written records in studying the geography of an area which does not exist. The reasons for denying the validity of such a division apply with almost equal force to any other. We can indeed, discover no logical date or period in time when such studies may be said properly to begin. If physical geography is something more than a summation of geological, climatological, ecological and similar studies, then a physical historical geography must exist to utilize the kind of evidence which is studied often in arbitrarily restricted categories, also by the historical geologist, paleontologist, and paleoclimatologist. For periods before the Pleistocene, and for much of that epoch, such studies either do not exist, or have been attempted only by scholars from one of these systematic fields. Not until late in the Pleistocene, and only after the appearance of ample evidence of culture, have geographers as such shown much interest. In practice, "dawn" for historical geographers rarely antedates the late Pleistocene; they have shown little interest in ages devoid of human culture. In logic, however, his license as a scholar leads him back in

time as far as he has interest and competence.

The division which any scholar makes between past and present is also a highly subjective one. Geographers of the contemporary scene more often than not use evidence from some distance into the past in analysis of present circumstance. Historical geographers are often concerned to project the significance of their conclusions forward in time. The only proper criterion to apply, in attempting to assess the contribution to historical geography in any study, is to judge its relevance to the reconstruction of past geographies and the interpretation of geographical changes through time.

#### Geography and History

Historical geography is distinct from history in both viewpoint and methodology. It is, at the same time, a genetic study giving that attention to differentiation through time without which there can be no adequate understanding of circumstances at a point in time. Since history, as that discipline is commonly understood, is also genetic it may be well to elaborate the distinction.

We take history to be concerned primarily with human society in its various facets, the character of its changes through time, and the ideas or other circumstances, including natural conditions, which have influenced those changes. The emphasis in geography, in contrast, has been chiefly directed to the surface of the earth, in whole or in part, and to areal associations and differentiations thereon. This is a clear difference, derived from what have been the core accomplishments of the two fields, and based solidly on the training, experience, and competence of scholars in the respective disciplines.

Accepting this distinction, historical geography can be defined as the study of the past circumstances of, or of changes in, phenomena of concern to geography. Its relationship with history as a genetic study and its place within geography as a whole can then be recognized with a minimum of confusion.

We would recommend that geographical history (or the geography of history as it has less happily often been called) be used to designate the study of the significance of areal differentiation and of natural circumstance to the changes in society and culture. This would seem to lie well on the history side of the foggy history-geography borderlands. Between geographical and historical geography lies much unexplored territory, some of it now being opened up by intrepid geographers, historians, and anthropologists. We expect no continuing confusion of historical geography with the clearly distinct history of geography although some of our major bibliographical listings still persist, unfortunately, in including the former under the latter heading.

#### Conclusion

To repeat, the geography of the past and geography through time appear to be the two best interpretations of historical geography. However prominently changes in time figure in our studies, however genetic their emphasis, historical geography is not history, not even geographical history, but is an integral part of geography as understood by geographers and as described in other essays in this volume.

#### THE OLD WORLD TRADITION OF HISTORICAL GEOGRAPHY

There is not space here for an elaborate structure of textual criticism to demonstrate the long evolution of what we call historical geography. As

it is of great importance to all geographers, however, to be fully aware of the venerable traditions of their field, some brief references to the history of historical geography in the western cultural tradition are appropriate.

### <sup>1</sup> Classical Traditions

In the legends and mythology from which the Homeric poems grew, we can identify some fact mixed with the fancy which attempted to recreate the past of the peoples and lands of the Aegean area. Later, Herodotus<sup>2</sup>, in his famous prologue to the description of Greek resistance to Persian invasions, is clearly a geographer and historian at once. His background studies included critical examination of earlier manuscripts along with arduous field work which would shame many modern geographers.

The philosophers and scientists who contributed so much, in the Greek and Alexandrian literature, to the background of mathematical and physical geography were little concerned with past geography; but the expansion of Greek culture, by the colonizing activities of the Greek cities throughout the Mediterranean-Black Sea lands, and through the later Alexandrian conquests, assured an audience for descriptive accounts of newly occupied areas and these descriptions were forthcoming in some quantity. In them we have often a kind of historical regional geography in which past and present characteristics of areas were intimately interwoven and in which changes in character were at least described, if little analyzed. In succeeding centuries Herodotus' work was echoed by Thucydides and others.

<sup>3</sup>  
Of the later writers Strabo in particular is supposed to reflect a change in geographical interest from the more rigorous systematic approach of the Greek philosophers to a narrative descriptive emphasis typical of the

spirit of Roman expansion. He shared the combined historical-geographical outlook of Herodotus; in the seventeen books of his "geography" his interest in the different areas is never narrowly limited to a strictly contemporary account. Among writers with greater or less interest in geography who followed, however, this tradition of Herodotus and Strabo was not maintained. There is, for example, very little of it from the imaginative encyclopedist, Pliny, or the mathematical astronomer, Ptolemy.

#### <sup>4</sup> Medieval Interests

The early centuries of the spread and dominance of Christianity in Europe are marked by a lack of specific historico-geographical emphasis. Lack of information and inhibition of critical faculties led to constant repetition of description, often inaccurate, and explanation, often dubious. That much of the descriptive material was very old certainly does not make the use of it historical geography. We thus find Roger Bacon, the Franciscan, whose relative independence of mind has led many to rank him as the father of modern scientific method, describing Ethiopia in terms which Ptolemy would have considered naïve and careless and which depended on unverified information up to 1500 years old.

Of little more interest to a background of historical geography were<sup>5</sup> the Moslem geographers, although the literature has not been explored adequately from this viewpoint. Rather cursory examination of critical estimates and translated writings of a few of the most prominently recognized figures shows only the most incidental interest in recreating past geographies. Closest of all to an historical geography is Al-Biruni's Kitab-Al-Hind or "Great Book of India".

It is among Moslem scholars known rather as historians that the clearest attempts to make analyses ranging from what we would call geographical history to historical geography are found. As early as the 9th century Al-Saladhuri was writing history with a marked geographical emphasis. In the 14th century Abulfida was including similar material in his encyclopedia. Most important of all Moslem scholars in this regard, however, was Ibn Khaldun, one of the greatest historians of any age or culture. From the easily available Prologomena to his Kitab-Al-Ibar, or "Universal History", it is evident that he was vitally concerned with the significance of different geographical situations, and different man-land relationships in agricultural or pastoral economies, on the developing characters of peoples, civilizations, and regions. There is a wealth of exceedingly useful reference to geographical circumstance in time and place.

## 6

## Medieval-Modern Transition

William Camden's Britannia, first appearing in 1586, has been rather widely accepted as the first modern example of our genre. Whatever its intent it was far from satisfactory as historical geography. In fact "to Camden and his contemporaries, as to many historians to this day, the simple elucidation, identification, and mapping of the place names occurring in historical records deserved the title of 'restoration of ancient Geography'".<sup>7</sup> It is in Camden's younger continental contemporary Philipp Clüwer (Cluverius) that we first indisputably recognize deliberate and fundamentally successful attempts at historical geography. It is the great misfortune of later geography that Clüwer, like Varen (Varenius) his younger contemporary, died young. He did however publish historical geographies of Germany, the Italian

peninsula, Sicily, Sardinia and Corsica and was perhaps even more influential than Varen in his impact on geographical thought in the late seventeenth and early eighteenth centuries.

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## Nineteenth Century

Neither of the nineteenth century figures whom historians have accorded a joint divinity in our professional Olympus, can be said to have contributed much directly to historical geography. Humboldt's Essai...  
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de la Nouvelle Espagne has sometimes been cited and it is certainly a comprehensive regional study with an historical bias in its concern for genesis, but in none of his epochal work did he concentrate his attention on geographical changes as such. Ritter, while often perhaps more of an historian than a geographer, never achieved a methodologic approach which would have allowed him to exploit fully his vast store of knowledge and almost uniquely suitable training in the direct service of historical geography. There are, however, extremely useful bits here and there in his writings which arouse in us regret that more was not forthcoming. These are particularly evident in the two dozen monographs which are interspersed through thirteen volumes of the Erdkunde  
10  
dealing chiefly with the historical background and distribution of certain plants and animals and agricultural, pastoral or mineral products, but including such diverse themes as the significance of lions and tigers in Asiatic cultural development. The importance of these studies is not only in their indication of themes and methods for historico-geographical research but in their stimulation of such important later writers as  
11  
Alphonse de Candolle and Eduard Hahn.

Meanwhile a different sort of combined historico-geographical

interest was developing among geographers, stemming from such diverse sources as the environmental determinism of Montesquieu, Herder, and Buckle<sup>12</sup> and the writings of Lyell and Darwin.<sup>13</sup> This approach supposed a necessary developmental sequence of culture according to simply conceived physical principles and, therefore, very closely tied to the physical environment. Among geographers, Katznel's<sup>14</sup> influence in this direction was great, although selective exegesis of his writings shows that he held diverse views on the question. Reaction was swift, and although some geographers were diverted to a kind of deterministic geographical history and others withdrew in protest to the refuges of purely physical geography a balanced and healthy approach to historico-geographical themes developed especially from Vidal's<sup>15</sup> school of French regionalists. Perhaps the most effective attack on the environmentalists, however, was that of the historian Febvre.<sup>16</sup>

It now appears that two major influences which cannot be attributed to the French regional school or to the environmental determinists at work in Germany and Britain contributed much to the groundwork of modern historical geography. These were the works of the ethnographers on the continent and of the empirical economic historians in Great Britain. To the former, in part at least, may be attributed the revolutionary studies of August Meitzen<sup>17</sup> of 1895 and Eduard Hahn's investigations of the development and spread of plant and animal husbandary.<sup>18</sup> In Britain the school of empiricists in economic history was led by Sir J. H. Clapham, whose works in economic history, if not historical geography in intent, were distinctly concerned with the economic geography of the past.<sup>19</sup>

#### Contemporary Studies

The purpose of this essay allows no extensive review of European

contributions of the past few decades to the literature of historical geography. They have been many and their scope has been broad, as a very small<sup>20</sup> selection of titles indicates. Of works in German there have been Götze's Hittite geography, Klotz's analysis of the geography of Caesar's writings, Kretschmer's reconstructions of past Central European geography, Oelmann's Haus und Hof in Altertum, Passarge's interpretation of the pre-Magellan geography of the Pacific islands, Sapper's investigation of the pre-Columbian economic geography of animals in the new world, Schott's Landnahme und Kolonisation in Canada and Schumacher's settlement and culture history of the Rhineland. It must be stressed that these examples are in general to be included in what we call pure, or basic, geography, and that German economic and regional studies with a contemporary emphasis more often than not include much historical background. Gradmann's Süd-Deutschland is one of the clearest examples. Moreover this sampling ignores much work in Pleistocene geomorphology, and extensive studies of changing climates, vegetation, associations, and soils.

The Vidal school and other geographers writing in French have continued their earlier emphases.<sup>21</sup> Although German and British interest in pre-literate historical geography has also been keen, French writers like Deffontaines have contributed perhaps the most interesting studies methodologically in this particular field. Otherwise Demangeon's studies of geography and history in the period of the French revolution, his joint study with Febvre on the Rhine, and Gallois' interest in the changing northern and eastern frontiers of France are indicative of what has been done. There are also many pertinent studies by non-geographers. No student of European historical geography, for example, can fail to profit from Henri Pirenne's

medieval urban studies, Jarde's report on cereals in ancient Greece, or Dienne's somewhat earlier history of the drying up of lakes and marshes in France before the Revolution. Because of the tradition of joint training in history and geography in French universities, it is unusual to find a geographer who has not a keen appreciation of historical geography or an historian without concern for geographical history.

This random sampling of a few works in French or German ignores not only the bulk of material in those languages but a substantial list of contributions in Dutch, Swedish, Italian, Russian and other European languages. One reason which has often been advanced for relatively less interest in historical geography on this side of the Atlantic is the unwillingness, or inability, of American and Canadian geographers, journeymen and apprentices, by and large to read in other languages than their own. Yet there now exists, in English, a rich literature in historical geography, coming from Britain in the last few decades in particular, in which American students can easily find examples and stimulation. As on the continent the emphasis on history in British education has been great but of even more significance, perhaps, has been a close community of interest between geographers, anthropologists and archeologists, which is immediately evident when one reads at all deeply in the British writings. Not only have we many eminent joint scholars like Fleure<sup>22</sup> and Forde<sup>25</sup>, and geographers like Cummerland<sup>24</sup>, interested in pre-literate geographies in different parts of the world, but the names of British archeologists who have contributed enormously to pre-historical geography reads like an honor roll of the profession :

Burkitt, Childe, Clark, Crawford, Fox, Hawkes, Peake, Piggott, Sollas and Wheeler, in what is a very incomplete list.

In addition to the Clapham school of economic historians already mentioned, a keen geographical flavor is found again and again, though perhaps, even so, much less than it might be, in British historiography. Another very selective list might include <sup>25</sup> Ashley, Cary, Collingwood, Ernle (Prothero), Gras, Hall, Haverfield, Home, Myres, Randall McIver, Thompson, and Warmington.

In consideration of geographers as such one finds that the great majority of British scholars, who are at all active, have published to a greater or less degree in historical geography. It is not enough to refer to Darby, East, Fleure, Gilbert, and E. G. R. Taylor as constituting the roster of British historical geographers. <sup>26</sup> Nor would it be sufficient to add Beaver, Bowen, Bryan, Cornish, Rodwell Jones, Linton, Ormsby, Pounds, Spate, and Woodridge. <sup>27</sup> In a casual search through the British journals the names soon mount to scores. <sup>28</sup> Work in the field by scholars other than geographers, historians, and archeologists is also large.

#### HISTORICAL GEOGRAPHY IN NORTH AMERICA

In North America there have been very few studies at any time which have been made avowedly as interpretations of the geography of the past. What has been done has often been incidental to other purposes. It is therefore not surprising that one must go far beyond the thin ranks of recognized geographers in search of examples. Before 1925 America had few scholars trained specifically as geographers to the doctorate, and the early band of enthusiasts who formed the Association of American Geographers (1904) was drawn from many fields.

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All too few modern geographers will think of George Perkins Marsh

as one of their own ilk, but in his concern with the changes which man had directly effected in the non-cultural complexes of the earth's surface, he is among the first, and one of the greatest, of our historical geographers.<sup>30</sup> At the turn of the new century Nathaniel Shaler's writings reflected similar interests. Moreover the contributions of the geologist-physiographers, from whose ranks came many of the founders of North American geography, were<sup>31</sup> substantial in interpretation of past physical geography. Basic to Davis' theory of the development of landforms, for example, was genetic consideration. It might well have formed an analogue for historical cultural geography which, however, was largely left to the incidental consideration of the historians of the expanding American<sup>and</sup> Canadian states and their culture; to Bancroft, Bolton, Doughty, Parkman, Paxson, Shortt, Thwaites, and Turner, and scores<sup>32</sup> of their contemporaries and associates who wrote their histories with a fine regard for regional character and the areal differentiation of both nature and culture. In a time when the conception of a cultural geography of North America was barely formed by indigenous scholars, the nominal historians plowed ahead. Although, as historical geographers, their efforts often suffer from the incidental nature of their geographical interest, and from their lack of appropriate training, their writings compare more than favorably in this respect with those of the great majority of recent American historians. Some, of course, held the seductive hope of interpreting culture and its development in terms of simple physical laws and wrote in the spirit of what can only be called a deterministic geographical history.

Such indeed was the viewpoint of the two writers, both early members of the Association of American Geographers, who have long been recognized as our first professional students avowedly in the historico-

geographical field. Some antecedents of environmental determinism have been mentioned before; its concepts proved particularly attractive to many biologists and geologists steeped in theory deriving from Darwin and Lyell. It is therefore less surprising than might at first appear to find the geologist, Albert Perry Brigham,<sup>33</sup> as one of the chief exponents of this interpretation of human geography. Better known to our present group, many of whose leaders she taught at one time or another, is Ellen Churchill Semple<sup>34</sup>, who brought to America from Friedrich Ratzel's seminars some of his more doubtful hypotheses in extreme or reoriented form. Perhaps in part because their deterministic theory could only be illustrated historically, both Brigham and Semple found their early interests in the North American historical record and their work can only be classified as between the fields of history and geography. It is interesting to read the several contributions of each with an eye to segregation as historical geography or geographical history. However subjective such a division must be, when done it does reveal how much, in what we may clearly call solid historical geography, both did accomplish - an appreciation which has often been denied them because of their influence in spreading the blight of geographical determinism through our primary and secondary schools.

Although we can well exclude much of Ellen Semple's extensive production, the individual studies of the great series which was ultimately collected in The Geography of the Mediterranean Region are important documents in any inventory of American historical geography. Similarly Brigham's influence studies are paralleled and succeeded by his stimulating descriptions of changing transportation routes through the Appalachians and the extension of wheat growing in North America.

Meanwhile some tentative beginnings in historical geography by other students were appearing. <sup>35</sup> Carl Sauer perhaps adumbrated his later interest with the historical overtones of "The Upper Illinois Valley" in 1916 and the "Geography of the Ozark Highland of Missouri" in 1918 and 1920. In 1919, also, Almon Parkins published "The Historical Geography of Detroit".

Anthropological interest was evident in Spinden's "Origin and Distributions of Agriculture in America" of 1915, and Kroeber's "California Place Names of Indian Origin" of the same year. In 1922 Gleason's "The Vegetational History of the Middle West" and Rostovtzev's "A Large Estate in Egypt in the Third Century B. C., A Study in Economic History", indicate the varied sources from which interpretation of past geography appeared.

#### Contemporary Inventory

Within the last twenty-five years contributions to historical geography have much increased although by no means so rapidly as have the numbers and publications of geographers without this bent. For this period conservation of space prevents mention of the important work of many not <sup>36</sup> nominally geographers, H. A. Innis, P. C. Webb and J. C. Malin being outstanding examples. We do not, thereby, suggest its lesser importance, but we feel that it is in the application to historical geography of a geographer's training that the great hope for the future may lie and that this analysis may have value chiefly for geographers whose specific interests are not yet formulated.

<sup>37</sup>

Two names dominate the record, in the last quarter century, those of Ralph Brown and Carl Sauer. The former was an independent, active, non-controversial scholar whose interest in historical geography developed,

without any clearly defined antecedents, from field research in the western mountain country and archival research in the history of American geography. Rarely were his methodological conceptions explicitly stated, but he did make some brief comments in 1936<sup>38</sup> in which he adopted the "geography of the past" viewpoint in unmistakable fashion. The two outstanding contributions from Brown were Mirror for Americans, Likeness of the Atlantic Seaboard, 1810 (1943) and Historical Geography of the United States (1948). The former is a beautiful example of a reconstruction of past geography in a limited cross-section in time. The latter exemplifies our other emphasis of historical geography as "geography through time". Together they may well constitute a monument not only to Brown himself, whose untimely death followed close on the publication of the second volume, but to the coming of age of American historical geography.

Brown's genetic treatment in his second work was in the tradition of an approach to historical geography incidental to the regional emphasis so strong in American geography in the late twenties and early thirties. If interest in past geography was rarely explicit, developmental interpretations of regional character have a large place in a score or more of such studies examined for this critique. With landscape<sup>39</sup> a fashion in terminology, changing landscapes became the manner of expressing interest in historical geography. A new twist in terminology was suggested by Derwent Whittlesey<sup>40</sup> in 1929 with the expression sequent occupance. In general the conception, as understood by those who used it, seems to have differed little from that of changing landscapes, but it has remained a popular descriptive title. In developing his approach, Whittlesey suggested that for any region stages could be established "during which human occupation of an area remains

Historical

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constant in its fundamental aspects." Apparently the theory was that regional change varied greatly in tempo and that by identifying periods of relatively slow change one could describe the occupation in a cross-section for each stage.

42

Three outstanding studies of this period which are clearly historical geography in the sense of this essay appear to illustrate the point that American geographers generally, to the degree that they have been interested in past geography, have usually been concerned with geographical change through time. These are James' "Blackstone Valley", Goldthwait's "A Town That Has Gone Down Hill" and Hall's "Tokaido: Road and Region." Each does focus on some periods more than others but attention to change is in the forefront of each. In other historical studies of the regional era of American geography one notes an unfortunate tendency to use the contemporary regional content as the major criterion of what, in past geography, one may reasonably consider.

Before discussing Sauer and his school it may be well to notice a few other examples of interest in historical geography in these years.

43

Trewartha's studies of the "Driftless Hill Lands", and those undertaken by his students in the same area, are of varied emphasis but fall in general into a classification of regional genetic study. His later (1946) paper on "Types of Rural Settlement in Colonial America" is a successful essay into the historical aspects of cultural systematic geography. Historical geography has, however, not been a major emphasis of his teaching or research.

44

Almon Parkins followed his pioneer study of the historical geography of Detroit with his indispensable historical studies of the South, whether more in the field of geographical history or historical geography may be hard to

assess.

Russell Whitaker is known to us chiefly for his work in conservation, but it may not be clear that this interest has grown along with a keen <sup>45</sup> <sup>46</sup> appreciation for historical geography. Stanley Dodge <sup>46</sup> has persisted with his careful historical studies of the regional geography of the Great Lakes-St. Lawrence ninterlands and has been among the few teachers, apart from Brown and Sauer, who has actively stimulated graduate students in this field. It happens that neither of our senior geographers, Whittlesey and Wright, who were trained in history before joining our fraternity, has been essentially interested in historical geography. Each has made contributions <sup>47</sup> in what he himself would doubtless call geographical history, but their primary concern has been, in political geography and the history of geography, respectively.

Apart from Brown, then, the other dominating figure in modern American historical geography has unquestionably been Sauer. His varied viewpoints in methodology have received so much attention in our literature <sup>48</sup> that there would be little point in detailed analysis here. . Curiously enough he may be said to have stimulated both of the trends in American geography which did, in fact, lead so many students away from the themes of historical geography which were to be his later prime interests. Many of the landscape school of regional geographers directly attributed their interest to him, and he was certainly one of the instigators, by his promo- <sup>49</sup> tion of regional economic surveys of land use, of the practical geographers who saw the purpose of the discipline as one of socio-economic regional engineering. The depression of the thirties and World War II in the forties, indeed, were to lead to such concentration of effort along applied

lines as to preclude much pure geography in any event.

Long before either the regional or planning emphases in geography was strongly in evidence, however, Sauer had begun, at the University of California at Berkeley, to develop his school. For more than a quarter of a century its great emphasis has been on one phase or another of historical geography. Not all of the dissertations submitted for the Ph.D. degree at Berkeley have had this character, and not all of the students who submitted an historical thesis have maintained that interest since completing their training there, but the mark of Sauer's influence seems strong on most of them. Sometimes students who were candidates for a degree elsewhere chose<sup>50</sup> to work for a time at Berkeley, as did Broek and Weaver. From time to time, overseas geographers of similar interests, like Schmieder,<sup>51</sup> taught and worked for a year there. Candidates for degrees in other departments were often strongly influenced, as was R. J. Russell. Students and teachers who have spent a summer session, a semester or a year with Sauer can be listed by the dozen. It is, however, among the students who were candidates for the doctorate and participated most largely in Sauer's stimulating seminars that the most profound and lasting interest in the historical approach was developed; the majority of them have since contributed something to an American literature of past geography.

It is interesting that Sauer rarely used the expression historical geography and rarely thought of himself as an historical geographer. He taught no course called historical geography and made no effort to channel his students. Many students went to Berkeley because of previous interest in historical geography, and students there have never been discouraged from following other themes if they desired. It was inevitable that many

of those who chose the field of historical geography should have studied  
52 problems of Latin America, but as many, or more, directed their atten-  
53 tion to the American area north of Mexico, or to other parts of the world.  
Indeed many of the doctoral candidates have never worked in what can be  
called historical geography at all, and some who may have done so in the past  
have since moved into distinctly different emphases, as have Leighly and  
54 Thornthwaite.

An examination of the dissertation topics accepted for degrees in  
geography in American universities up to 1945, and reading of the documents  
or discussion with some of the geographers involved where the title might  
have been ambiguous, make it clear that many other major centers of geo-  
55 graphy have accepted research in historical topics. The influence of  
Dodge, Hall, and James at Michigan encouraged such theses, in Black,  
Glendinning, Guthe, and Kohn, for example. At least six of the disserta-  
tions at Chicago, including those of Espenshade, Torbert, and Whitaker,  
and many of those at Clark, e.g., those of Diettrich, Ekblaw, James,  
Primer, and Prunty, and Wisconsin, as the studies of Guy-Harold Smith, Williams,  
and Weaver but, curiously, less clearly that of Brown, are to some degree  
historical. Klimm's dissertation at Pennsylvania, Kollmorgen's at Columbia,  
Stephen Jones' at Harvard, Watson's at Toronto, and those of Petty and  
Lezius at Ohio State and of Kyser and Reynolds at Louisiana State also had  
at least something of this emphasis. Yet of all the students who cut  
their research teeth on such topics, perhaps only Jones, Kollmorgen, and  
Whitaker have given substantial evidence of continuing interest and all  
three have been largely concerned in efforts directed elsewhere. The  
most surprising feature of this review is that the inspirational teaching

of H. H. Barrows at Chicago in the field of historical geography should have been so little reflected in his own published research or in that of his students.

We thus come back to Sauer and his methods to discover what has given historical geography its main American impetus in recent years. If he did not teach the subject of historical geography what, apart from the example of his own writing, set the direction so many followed? In seminars, field trips, lectures, and a constant stream of casual comments he did hammer away at a relatively few themes. He assumed in his senior students literacy and understanding in climate, soils, landforms, plant associations and maps, and he was unsparing in criticism of those who tried to get by with inadequate training in physical geography. In introducing students to cultural geography, he preferred to leave the infinitely complex problems of urban, political, and economic geography for later consideration and have students begin their studies of the areal differentiation of culture through the reading of anthropological and archeological materials. Although he did not restrict his interest in culture solely to material, observable phenomena, he quite obviously felt that a geographer was fundamentally more concerned with things of the earth's surface than with conceptions of the minds of men as such. He encouraged his students to reach out to any source, in field, archive, or library, however, for explanation of their geographical problems and recognized no boundaries in the search for relevant knowledge. Above all, by precept and example, he everlastingly insisted on the genetic approach and he unquestionably convinced most of his students that the genetic approach could only be effectively taken in what others would call historical geography. In retrospect it thus seems that what Sauer,

consciously or not, was inculcating, was a particular approach to geographical study in general, and that it was the rest of the profession which tabbed him and his students with the label which he, and for the most part they, finally accepted as appropriate.

Although Sauer is most widely known to scholars of other fields through his writing, American geographers think and speak of him chiefly as a teacher, usually admiringly or as a methodological polemicist, often in a somewhat different tone. Indeed a casual listener in the geographical back rooms might suppose that in the quarter century since the publication of the "Morphology of Landscape" he had contributed only his "Foreward to Historical Geography".<sup>56</sup> In fact his publications have been continuous and broadly varied. In area he has reported on different parts of the American Southwest and on many parts of western and central Mexico. In time his interests have extended back to the beginnings of culture in the Western Hemisphere and to the Mesolithic of the old world. Although the themes have been varied too, there has been an overall concern for the changing relationship of man with plants, animals and soils, in their geographical significance. Perhaps this is the theme in historical geography which has most interested those of his students who have worked in the geography of the past.

In a retrospect of American historical geography from Marsh to Sauer and his students, it is perhaps fair to say that the most significant emphasis has been on the historical record of man's use, alteration, and rearrangement of his only potentially permanent resources: water, soil, vegetation, and animal life. Sometimes, when the practical utility of research in historical geography is questioned, its enthusiasts are tempted

not to argue the basis of such a utility judgment but to ask what more significant study for our society students of the earth's surface can make. Unless we can somehow learn what has been done in the past with the resources necessary to our future, most of our land and resource planning may well add up to a colossal aggregation of busy work.

In practice, historical geography in American has not been the inclusive field we may theoretically envision it. There has been little conscious physical historical geography and less systematic cultural historical geography than one might wish. Emphasis, apart from the dominant theme of conservation and destructive exploitation of renewable resources has tended to be on urban and regional cultural studies. This may have its source in the feeling, voiced by Sauer, that historical geography and regional cultural geography are to be equated. We, however, see historical geography as far more than a part of culture history - as indeed a theme of great importance in any phase of geographical work.

#### THE FUTURE OF AMERICAN HISTORICAL GEOGRAPHY

Historical geography, we have insisted, represents nothing more than a direction of our geographical interests backward in time. Some have thought this an inappropriate emphasis for geographical study, particularly if temporal change is considered of signal importance. More geographers would accept the retrospective view as useful and desirable but would be uninterested in using it themselves. Those who are concerned with teaching and research in historical geography have always, as we have seen in the record, been a rather small number. Perhaps they always must be. The argument of this essay is, however, that for the future at least the present degree of

interest must be maintained for the enrichment of geography as a whole. We shall, therefore, in this concluding section of our report, look to the future in terms of problems of research waiting to be done, the training of the apprentice, and opportunities for the expansion of teaching, that the study and interpretation of the geography of the past may hold and advance its indispensable place in our discipline.

### Research in Historical Geography

Research in historical geography is the attempt to discover the answers to serious questions which come to our minds, by examination of the geography of the past. Most of it might be called pure research. We should, however, neither take pride in that out of some twisted sense of intellectual snobbery, nor be ashamed of it from the pricks of our social consciences in an age when pure research has so often proved more productive and practical than its applied counterpart. The answers we find will, more often than not, have relevance to contemporary geography and always to an understanding of the world as it is through a study of what it has been. Through it we gain substance and authority for our qualified forecasts of the future.

A decade ago Carl Sauer made a list of possible themes for needed  
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research in historical geography which, with some revisions and additional suggestions, indicates the kind of study to which the historical approach lends itself. It is far from comprehensive but may serve as something of a guide.

The first theme is that of the effect on culture of certain processes of physical geography: climatic change, natural alteration of

vegetation, reorientation of drainage, or advance and recession of coastal waters. Although (4) Sauer's more limited view of the scope of historical geography, (5) did not indicate it; this suggests the further need for a devotion of time and effort to purely physical historical geography, to a study of these changes in themselves with the evidence, and methods of finding it, which we have at our disposal. We have talked glibly long enough of such changes and their effects with but a smattering of solid evidence, and it is high time that research in these aspects of historical geography should receive more attention. Our quarrel with the extreme determinists is not an assertion that their theses cannot be proved, though we are temperamentally inclined to doubt that they can, but simply that they never have been proved and that until the necessary tough analysis takes place their theories remain airy, and inherently unlikely, hypotheses. The findings of such research will have great relevance in a dozen other fields of knowledge.

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Again, Marsh, Sherlock, and a great many others have studied and speculated on man's role as an agent in physical geographical change. They, and the few who have followed, have barely scratched the surface of what we want and need to know. Does forest clearing really affect local climate? Has culturally accelerated soil erosion been a problem, not just of yesterday, but of thousands of years? Is one of the main themes of Mediterranean historical geography the washing of the hill tops into the valleys through vegetation destruction? How extensive and significant have been the alterations of faunal associations by selective fishing or hunting, or in other ways? What has been the ultimate hydrologic effect of drainage here and irrigation there for thousands of years, and how has it altered local soils? Are the Argentine Pampas, the American prairie, the Sudanese

savanna, the New Zealand tussock, culturally induced grasslands, and if so, how were the changes effected? Such are a few of the more obvious unsolved problems in this category.

As geographers we have had a lot to say about the locations of centers of settlement of all sizes and of industrial and commercial enterprises. Much of it has been convincingly presented and our colleagues in economic geography deserve great credit for their efforts. We may, however, venture the opinion that without the historical perspective of the general changing regional geography, through which the varying significance of the physical land may be seen, we have lacked the evidence for some of the conclusions we have so confidently reached. Surely more study of the past could bring us more satisfactory answers than we have for the problems of dispersed and agglomerated settlements; of the establishment of sub-regional functional specializations of economies; or many more of the endless queries which relative location raises. More and more we are deliberately planting industries, and thereby often towns and cities, by government fiat. Do we seriously believe that intelligent judgments as to locations can be made with no insight drawn from the only equivalent to a laboratory a geographer has, the record of past geography?

Again, also by government decree, through manipulation of monetary reward for products or through public land policy, we rapidly make over from time to time the land-use practices of large areas of our country. We establish rural amenities, such as electricity, schools and libraries, to engineer the movements of rural population or to try to control its flow to towns. What have we learned from the past about changes in patterns of land utilization? If a new crop, animal, or technique is introduced into

a rural economy what unforeseen changes, one setting up another in train, may ensue in the characteristics of the area? The rural sociologists and agricultural economists do their best, and it is often very good indeed, but how greatly could they not be aided by reports from historical geographers of what has happened in similar situations in the past?

At present the maladjustment of population and resources in different parts of the world, and in the world as a whole for that matter, is receiving great public attention. Optimists or pessimists, we are all anxious to try to improve the ratio in favor of increased resources, particularly in tropical America and Africa and in southeastern and eastern Asia. Yet, it is becoming evident that, whatever our bias, we may in the main have been talking through our collective hats. We really do not know what to do both because we know too little of the cultural geography of the areas concerned, and because we have not read from the record of past changes what the critical elements in balance may be. We do not make the absurd claim that research in historical geography can reach definitive, all-inclusive answers, but we do suggest that we are very short on even partial answers and that such research might well make its modest contribution. Imbalance of population and resources, cultural receptivity, and cultural lag, rapid changes in techniques and population, indeed most of the themes arising in the present problems have recurred again and again in the past. The world as we have known it is changing and we wish, with great fervor, to give direction to the change or, if that is impossible, to make some intelligent guesses as to where the changes, in regional equipment, economy or character, may lead. There is no dearth of problems; only of curiosity to see them and of industry to solve them.

The Training of Geographers in Preparation  
for Historico-Geographical Research

The professed viewpoint of this paper, which stresses the theoretical inclusiveness of historical geography, would perhaps suggest that a well-trained historical geographer was simply a properly prepared geographer. This would shift the emphasis to a long, subjective, and probably very dull analysis of what any geographer should study. We have therefore chosen to read from the record of the training and teaching of Brown and Sauer what has gone into, or what they have felt should go into, such a training.

Brown at Wisconsin, and Sauer at Chicago, as students, were most assiduously drilled in the fundamentals of physical geography. Sauer, in particular, continued to emphasize this background in his teaching and where he found himself or his students weak, as in plant geography, spared no effort to increase his and their knowledge, of the field. Generally our resources for the training of students in the study of land-forms, climates, and soils are adequate, if we most earnestly encourage our students to make use of them, but most of our schools are weak in plant geography, a gap which we should hasten to repair. A productive historical geographer untrained, or uninterested, in physical geography has been a rare anomaly.

Again, Brown made a deep study of the Indian geography of North American and Sauer is forever turning to anthropological and archeological research. Indeed, there seems no better preparation for the study of more complicated problems of change in cultural geography than the study of regions occupied by economically primitive societies in fairly recent times, or of the changing cultural geography of the earlier years of human culture.

Until our university departments of geography give more consideration to such themes our putative embryonic historical geographers might well dig deep in the anthropological and archeological literature or, if opportunity offers, literally in an archeological site. Unfortunately most of the areas still under primitive economies are not easily accessible but where such opportunity is presented it should be most avidly seized. And there is no more instructive exercise than to try to recreate prehistoric regional geographies from the evidence at hand.

This brings us to a third point: that the best place to study any kind of geography is the field. Brown was and Sauer is a superb field observer. Any notion that historical geography is only a library pursuit should be discarded at once by prospective recruits. Indeed field work in historical geography may be, at the same time, more difficult and more rewarding than field work in more contemporary emphases. It is, for example, almost mandatory that transcripts of old maps and documents be taken into the field and the findings from archival or library work be checked constantly in the area, or areas, to which they have reference. "The first objectives of historical field work are to value the habitat in terms of former habit, and to relocate the former pattern of activity as indicated in the documentary record. To these are added more specific tasks of field observation. The chief of these may be called the location of cultural relicts and fossils!"<sup>59</sup> A geographer may often be working on a problem of great interest to economic or other historians but from his familiarity with and, one hopes, skill in field analysis he has the opportunity to see things they are bound to miss, above all, the integration of nature and culture in area. Field work involves, too, the effective use

of the interview, regarding which historical geographers may learn much from the sociologists and anthropologists and apply their skills in searching the memories of the older inhabitants.

Again, Brown and Sauer each made himself a master of the techniques of documentary research, not an easy task, but an indispensable one. We will always find the reconstruction of past geographies difficult and we need every shred of help we can get from documentary evidence: government papers of all kinds, newspapers, letters, diaries, commercial records, traveller's notebooks, and above all maps both of the past and the present. The National Archives in Washington is, for example, a rich mine of material;<sup>60</sup> There one of the members of this committee, Friis, is actively encouraging the use of its resources for research in the field. Historical geographers should now be beating a path to the doors of the National Archives for it is bulging with answers to the young scholar's query, "What is there left to do?" There are of course archival centers of one kind or another in dozens of places, notably those of State Historical Societies, and local problems suggest the careful exploration of all old local records. But we stray from the point. By using them, the only effective training, the young scholar must learn to employ skillfully the archival materials. Unless he develops both skill and pleasure in his work he is unlikely to find a career devoted to historical geography either congenial or rewarding.

The acolyte must, moreover read all the history he can, especially economic and agricultural history. Indeed a critical test of the aptitude of any student for the field of historical geography might well involve affirmative answers to these questions: Are you prepared to make a thorough study of the branches of physical geography? Do you like

field exploration? Do you enjoy reading history and anthropology?

In history, there is of course nothing more important than the history of geography itself. We have neglected it shamefully in our university preparation. Even where we provide our students with a dash of it on top of a heavy meal of methodology, there is usually too little emphasis on the reading of the substantive works of past geographers; all of us have probably given time to secondary comments that could better have been spent on the originals. To venture beyond English requires that skill in languages we so solemnly require and so seldom insist on among our graduate students. The university that lets one slip by with an inadequate reading ability of languages other than his own, is hindering, not helping, any possible career in historical geography.

Finally, the most successful historical geographers have been those who thoroughly knew their regions. They cannot plunge with gay abandon into the study of one unfamiliar region after another. Indeed, their approach must be the antithesis of reconnaissance. As a result the apprentice historical geographer should be encouraged to limit his interests not necessarily to one small area but at least to a limited group of areas, related by some overall theme, about which he can hope to accumulate a depth of knowledge through the years. Regional expertness is not acquired in a month's visit, nor by attendance at a regional university lecture course.

This asks much from the young scholar who wants to work in the geography of the past, yet there remain facets of historical geography which few can hope to master. No one man can be archeologist, epigraphist, anthropologist, historical geologist or the score of other things he

would have to be if he undertook alone, for example, reconstructions of prehistoric and ancient historical geographies. Prehistoric or historical, the geography of the past has often to be the result of cooperative research, at least in the sense of the careful study of the findings of other scholars and frequent consultation with them. It is not an easy task and calls, at times, fairly heavily on courage and confidence. But what worthwhile piece of research does not?

### The Teaching of Historical Geography

Many of our institutions offer courses and seminars entitled "Historical Geography", but many more do not. That this is no test of presence or lack of historical emphasis has been shown above. But whether under the name of historical geography or not we should like to see an increase in such offerings for we believe that historical geography of any theme or region or time-span is one of the very best ways to introduce a geographer's viewpoints to the general student body; to convince it that geography offers neither a purely descriptive continuation of a dull, fifth-grade subject, nor an anthology of selections from the great range of earth, life and social sciences, nor a simple formula by which the answers to some of the most serious problems of all the ages can be solved through the entering of certain precipitation and air-temperature figures. Moreover there may be few courses available to the student anywhere, even in a great university, more likely to stimulate his imagination and curiosity about his own land and culture. Certainly historical geography asks more questions than it answers and usually it must be taught without a guiding text. These are, perhaps, two of its greatest educational virtues.

Again, it encourages exploration of some of the most fascinating of literature, the first-hand descriptions of nature and travel in the past. Students never exposed to the historical view of geography may never have learned how endlessly exciting is our field of investigation and interpretation.

The other facet of the teaching of historical geography is that of learning in the graduate seminar. The desirable training for a research career in historical geography has been discussed at enough length, but the graduate seminar, in a topic which is treated historically, is a magnificent vehicle for the examination of problems in a fashion which will stimulate and instruct the trainee, whatever his specific interest in geography. In a statement prepared for a discussion at the meetings of the Association of American Geographers in Madison in 1949 Sauer described the ideal seminar in these words: "The seminar should be a frequent (e.g. weekly), leisurely (e.g. evening-long) prepared conference on research done, doing, or projected, in which students and faculty participate, ideally because they are interested in getting at each other's information and views... Such a colloquium should depend only on the need felt by those who take part in it. Direction is by the staff member who himself is most concerned as a student with the subject. Other staff members should feel free to join such a round table."<sup>61</sup>

The purpose of such a seminar is far more than that of giving training in the techniques of scholarly research. Its justification lies rather in the degree to which it stimulates curiosity and suggests ways of satisfying it, stirs the imagination of all participants, and encourages serious but lively debate from which new formulations of ideas, and new insights, may come. It is in the seminar, particularly, that we may hope to escape

from the curse of dealing with second-hand ideas, of serving the students with only the warmed over remnants from the intellectual banquet they should be enjoying themselves.

Just because the historical view of geography is freer from formula and has a more plastic tradition, the seminar in historical geography especially lends itself to experimentation, trial flights of fancy and the encouragement of the expression of ideas, however tentative. Above all the choice of a theme leading into past geography encourages the stress on process and genetic consideration which we feel to be of such vital importance in geographical scholarship in general.

#### CONCLUSION

The above discussion has considered the meaning of historical geography, its tradition in the development of geographical study through the years, its place in the short history of American geography, and some suggestions for its future in terms of research, training and teaching.

It is, we feel, both the geography of the past and geography through time, and it is any and all geography so considered. It is not a summation of the environmental connotations of history as that field is usually understood; for such studies we suggest the name geographical history. Nor is it simply an aspect of the history of geography.

The rationale of this emphasis for the historical geographer is that, through a study of past geography, he may find at least partial or tentative answers to some of the major problems of interpretation of our world as it is. That such an approach may be classified as pure rather than applied is to him neither a condemnation nor an accolade; it is, in general, simply a sensible classification of his efforts.

For geographers in general, and for those in applied fields, there are at least two major contributions which an historical emphasis can make. The first is that the record of the past is the only equivalent to a laboratory a geographer has. He cannot set up a controlled experiment to watch nature and culture combining forces to create the character of regions and the vast variety of inter- and intra-regional patterns of natural and material cultural forms. He can only look back through the record to try to understand the processes by which his objects of curiosity assumed their present forms and arrangements. Moreover a geographer who accepts the tyranny of the exclusively temporary to concentrate his attention narrowly on the present and most recent past denies himself, very often, the largest part of the pertinent data upon which his conclusions and actions should be based. The time dimension may vastly enlarge his data base, and this service may be particularly noteworthy where contemporary sources of data are few and the dangers of generalization from scanty evidence are most obvious.

We feel that research in historical geography, the training of historical geographers, and the teaching of historical geography all need to be rapidly accelerated. There seem to be few better ways of guaranteeing the continued vitality of geography as a whole and of insuring not just tolerant, but enthusiastic acceptance of what we do by the worlds of intellectual activity and practical affairs. Historical geography has been an enlightening theme throughout the venerable and honorable traditions of our great discipline. It is as important for the geographer of today as it was for any of his forerunners if he is to justify his activities in the only way in which, ultimately, they can be justified, by contributing to an understanding of the world in which he lives.

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17. Meitzen, A., Siedlung und Agrarwesen der Westgermanen und Ostgermanen, der Kelten, Römer, Finnen und Slaven (4 Vols., incl. atlas as Vol. 4), Berlin, 1895, esp. Vol. 1 (Wanderungen, Anbau, und Agrarrecht der Völker Europas nördlich der Alpen).

18. See note 11 above.

19. A general critical review of Clapham's work, including the posthumous Concise Economic History of Britain, London, 1919, is given by A. P. Usher in Journal of Ec. Hist., Vol. 11, 1951, pp. 148-153. Two of his studies which are of outstanding importance for historical geography are: The Woolen and Worsted Industries, London, 1907; and An Economic History of Modern Britain, 1820-1850: The Early Railway Age, London, 1930.

20. These are a more or less random selection of one work each from a few of the authors who might be included. In order of mention: Götze, A. "Zur Geographie des Hittiterreiches", Kleines Forschungen, Vol. I, 1927, pp. 108- ; Klotz, A., "Geographie und Ethnographie in Caesars Bellum Gallicum", Rheinisches Museum, Folge 83, 1934, pp. 66-96; Kretschmer, K., Historische Geographie von Mitteleuropa (Vol. 4 of Handbuch der Mittelalter und neuer Geschichte), München, 1904; Oelmann, F., Haus und Hof in Altertum (Vol. 1 of Die Grundformen des Hausbaus), Berlin, 1927; Passarge, S., "Die politisch-geographischen Grundlagen des Südseegebiets vordem Eintreffen der Europäer", Pet. Mit., Vol. 72, 1926, h. 9-10, pp. 209-12; Sapper, K., "Jagdwirtschaft, Tierhaltung, und Tierzuchtung der Indianer in vorkolumbischen Zeit", Mitteilungsblatt der deutschen Gesellschaft für Völkerkunde, Vol. 9 (Hamburg), 1939, p. 41-56; Schott, C., Landnahme und Kolonisation in Canada: am Beispiel Südontarios (Schriften des Geogr. Inst. d. Univ. Kiel, Band 6) Kiel, 1936; Gradmann, R., Süddeutschland, Stuttgart, 1931.

## 21. Again a most severely curtailed and eclectic listing:

Deffontains, P., "Essai de géographie préhistorique du Limousin et son pourtour sédimentaire", Annals de Géographie, Vol. 42, 1933, pp. 461-476; idem.

"Essai de géographie préhistorique de la Tschechoslovaquie", L'Anthropologie, Vol. 40, 1930, pp. 275-283; Demangeon, A., "Géographie et histoire: les

paysans du Nord de la France pendant la révolution française", Annals de Géographie, Vol. 34, 1925, pp. 62-66; Demangeon, A. and Febvre, L., Le Rhin: problèmes d'histoire et d'économie, Paris, 1935; Gallois, L. L. J., . . .

Les variations de la frontière française du Nord et du Nord-Est, Paris, 1918;

Pirenne, H., Medieval cities: Their Origins and the Revival of Trade (transl.

by F. D. Halsey), Princeton, 1925; idem., Les villes et les institutions

urbaines (2 vols.), Paris, 1939; Jarde, A., Les cereales dans l'antiquité

grecque (Vol. 1, "La production"), Paris, 1925; and Dienne, E. le comte de,

Histoire du dessèchement des lacs et marais en France avant 1789, Paris,

1891.

22. Perhaps Fleure's greatest monument is his joint work in collaboration with Peake: Peake, H. J. E. and Fleure, H. J. The Corridors of Time (8 Vols.) London and New York, 1927-1936. Forde, C. D., Habitat, Economy and Society (a geographical introduction to ethnology) London, 1934, is the classic of its field.

23. Cumberland, K. B. "Aotearoa Maori: New Zealand about 1780," Geographical Review, Vol. 39 (1949), pp. 401-424.

24. Burkitt, M. C., Prehistory, Cambridge, 1925; Childe, V. G., Man Makes Himself, London, 1941, and idem., "Adaptation to the Post-Glacial Forest of the North Eurasian Plain", pp. 233-242 in McCurdy, G. C., Early Man, N. Y. 1937 (to cite only two of a score or more); Clark J. G. D., The

Mesolithic Settlement of Northern Europe, Cambridge, 1936; Crawford, O. G. S., Topography of Roman Scotland: North of the Antonine Wall, Cambridge, 1949; Fox, Sir, C. F., The Personality of Britain, Cardiff, 1943; Hawkes, C. F. C., The Prehistoric Foundations of Europe to the Mycenaean Age. London, 1940; Peake, H. J. E. (see note 22 above); Prehistoric India (Pelican Book) Harmondsworth, 1950; Sollas, W. J., Ancient Hunters and Their Modern Representatives (3rd ed. rev.) N. Y., 1924; and Wheeler, R. E. M., Prehistoric and Roman Wales, Oxford, 1925.

25. For Cary and Warmington, see note 1 above. For the others: Ashley, Sir Wm., The Bread of our Forefathers, Oxford, 1928; Collingwood, R. C. and Myres, J. L. Roman Britain and The English Settlements (Oxford History of England), Oxford, 1936; Ernle, Lord (Prothero, R. E.), English Farming Past and Present (5th ed., ed. by Hall, Sir A. D. ), London, 1936; Gras, N. S. B., The Social and Economic History of an English Village (Crawley, Hampshire), A. D. 909-1928, Cambridge (Mass.) 1930; Hall, H. R. H., The Ancient History of the Near East. from the Earliest Times to the Battle of Salamis, London, 1913, Haverfield, F., The Romanization of Britain, (4th ed.), Oxford, 1923; Home, G., Roman London: A.D. 43-457 (2nd ed. rev.), London, 1948; Myres, J. L., "The Marmara Regions: a Study in Historical Geography," *Scot. Geog. Mag.*, Vol. 40, 1924, pp. 129-150; Randall-McIver, D. The Iron Age in Italy and The Etruscans, both Oxford, 1927 and Italy before the Romans, Oxford, 1928; and Thompson, J. M., Historical Geography of Europe (800-1789), Oxford, 1929.

26. Reference to Fleure (note 22) and Taylor (note 6) appear above. The contributions of Darby, East and Gilbert are extensive. Good examples are: Darby, H. C. (ed.) An Historical Geography of England before 1800,

Cambridge, 1936; idem, The Medieval Fenland and The Draining of the Fens, both Cambridge, 1940; East, W. G., An Historical Geography of Europe (3rd ed. rev.), London, 1948; idem, "Historical Geography," pp. 80-102 of The Spirit and Purpose of Geography (with Wooldridge, S. W.) London, 1951; Gilbert, E. W. The Exploration of Western America, 1800-1850 (an Historical Geography), London, 1933.

27. Beaver, S. H. "The Development of the Northamptonshire Iron Industry, 1851-1930," Chapter III in London Essays in Geography, by D. L. Stamp, S. W. Wooldridge, and others. Cambridge (Harvard University Press), 1951, pp. 33-58; Bowen, E. G., Wales, a Study in Geography and History, Cardiff, 1941; Bryan, P. W., Man's Adaptation of Nature: Studies in the Cultural Landscape, London, 1933; Cornish, V., The Great Capitals: An Historical Geography, London, 1923; Jones, L. R., Geography of the London River, London, 1931; Ormsby, H., London on the Thames, London, 1924; and Pounds, N. J. G., An Historical and Political Geography of Europe, London, 1947. The contributions of Linton, Spate, and Wooldridge which are in mind appear in Darby (ed.), 1936 (see note 26).

28. In the Rodwell Jones memorial volume of seventeen essays (see Beaver, 1951, note 27), for example, at least seven would be indisputably classed as historical geography and the combined London "school" has not noticeably emphasized that study.

29. Marsh, G. P., The Earth as Modified by Human Action, New York, 1874 (a later edition of Man in Nature, or Physical Geography as Modified by Human Action, 1864).

30. Shaler, N. S., Nature and Man in America, New York, 1894 and idem, Man and the Earth, New York, 1905 are the most important but his

Domesticated Animals, New York, 1895, is also of interest.

31. I. e. William Morris Davis whose extensive bibliography is largely contained in Daly, R. A., "Bibliographical Memoir of William Morris Davis, 1850-1934," Nat. Acad. of Science, Washington, D. C. Biographical Memoirs, Vol. 23, 1945, 11th memoir, pp. 263-303 (bibl. pp. 283-303).

32. Bancroft, H. H., California Pastoral, 1769-1848, San Francisco, 1888; Bolton, H. E., The Spanish Borderlands, New Haven, 1920; Shortt, A., and Doughty, A. G., Canada and Its Provinces, Edinburgh, 1914-17; Parkman, F., The Oregon Trail, Boston, 1922 (Centenary edition of his collected works); Paxson, F. L., History of the American Frontier, 1763-1893, Boston, 1924; Twaites, R. G. (ed.) Early Western Travels, 1748-1846 (32 vols.), Cleveland, 1904-07; and idem (ed.) The Jesuit Relations (73 vols.), Cleveland, 1896-1901; and Turner, F. J., The Frontier in American History (1st ed., 1920) New York, 1948. Without attempting anything at all comprehensive we may perhaps add just three more names: Hulbert, A. B., Historic Highways of America (16 vols.), Cleveland, 1902-1905; Kellogg, L. P., The French Regime in Wisconsin and the Northwest, Madison, 1925; and Winsor, J., Cartier to Frontenac; Geographical Discovery in the Interior of the North American Continent, 1534-1700, Boston, 1894.

33. Brigham, A. P., Geographic Influences in American History, Boston, 1903; idem, From Trail to Railway Through the Appalachians, Boston, 1907; idem, "The Development of Wheat Culture in North America," Geographical Journal, Vol. 35 (1910), pp. 42-56; idem, "Problems of Geographic Influence," Annals of the Association of American Geographers, Vol. 5 (1915), pp. 3-25.

34. Semple, E. C., American History and its Geographic Conditions (revised in collaboration with C. F. Jones), Boston, 1933 (1st ed. 1903);

idem, Influences of Geographical Environment, New York, 1911; and The Geography of the Mediterranean Region; its Relation to Ancient History, New York, 1931. There are a score or more of articles which are not largely included in one of these three volumes, e.g., "The Development of the Hansa towns in relation to their geographical environment," Journal Am. Geog. Soc., Vol. 31, 1899, pp. 236-255.

35. Sauer, C. O., "Geography of the Upper Illinois Valley and History of Development," Ill. State Geol. Surv. Bull., No. 27, Urbana, 1916, pp. 1-208; idem, "Geography of the Ozark Highland of Missouri," Geog. Soc. of Chic., Bull. No. 7, 1920, 245 pp.; Parkins, A. E., "The Historical Geography of Detroit," Michigan Hist. Comm. Publ., Univ. Ser. No. 3, Lansing, 1918, 356 pp.; Spinden, H. J., "The Origin and Distributions of Agriculture in America," Proc., 19th Internat. Congress of 1915, Washington, 1917, pp. 269-276; Kroeber, A. L., "California Place Names of Indian Origin," Univ. of Calif., Publ. in Am. Ethn. and Arch., Vol. 12, 1915, pp. 31-69; Gleason, H. A., "The Vegetational History of the Middle West," Annals of the Association of American Geographers, Vol. 12 (1922), pp. 39-85; Rostovtzev, M. (also Rostovtzeff, etc.), "A Large Estate in Egypt in the Third Century B. C.; a Study in Economic History," Univ. of Wis., Studies in the Social Sciences and History, No. 6, 1922.

36. Innis, H. A. (ed.), Select Documents in Canadian Economic History, Toronto, 1929; and, idem, The Fur Trade in Canada, New Haven, 1930, are among his best; Malin, J. C., "Grassland, 'Treeless,' and 'Subhumid' . . . , Geographical Review, Vol. 37 (1947), pp. 241-250; idem, The Grassland of North America: Prolegomena to its History, Lawrence, Kansas (the author), 1947. This report includes an extensive bibliography; Webb, W. P., The Great Plains.

Boston (Ginn), 1931.

37. No extensive bibliography has yet been published for Sauer, though Brown's is given quite fully in the memorial note in the Annals of the A.A.G.: Dodge, S. D. "Ralph Hall Brown, 1898-1948," Annals of the Association of American Geographers, Vol. 38 (1948), pp. 305-309.

Mirror for Americans . . . was published in New York, by the American Geographical Society and Historical Geography . . . also appeared in New York.

Although a full bibliography for Sauer cannot be given here, reference will be made to, or ideas have been drawn from, (in addition to the citations in note 35) the following publications by him (dates of publication are given on the left for convenience):

- 1924 "The Survey Method in Geography and its Objectives," Annals A. A. G. Vol. 14, pp. 17-24.
- 1925 "The Morphology of Landscape," Univ. of Calif., Publ. in Geography, Vol. 2, pp. 19-53.
- 1927 "Recent Developments in Cultural Geography," pp. 154-212 in Hayes, E. C. (ed.), Recent Developments in the Social Sciences, Philadelphia.
- \_\_\_\_ "Geography of the Pennyroyal, Frankfort, Kentucky," Kentucky Geol. Surv., Series 6, Vol. 25, 303 pp.
- 1933 "Historical Geography and the Western Frontier: The Human Record," pp. 267-289 in Papers Read at a Conference on the History of the Trans-Mississippi West, Univ. of Colorado, Boulder, 1929.

- 1931 "Cultural Geography," pp. 621-624 in Encyclopedia of the Social Sciences, Vol. 6, New York.
- 1932 "The Road to Cibola," Ibero-Americana, No. 3, pp. 1-58.
- 1934 "The Distribution of Aboriginal Tribes and Languages in Northwestern Mexico," Ibero-Americana, No. 5, pp. 1-94.
- 1935 "Aboriginal Population of Northwestern Mexico," Ibero-Americana, No. 10, pp. 1-33.
- 1936 "American Agricultural Origins. A Consideration of Nature and Culture," pp. 279-297 in Lowie, R. B. (ed.) Essays in Anthropology (in honor of A. L. Kroeber) Berkeley.
- 1938 "Destructive Exploitation in Modern Colonial Expansion," Proc. Int. Geogr. Congress, Amsterdam, Vol. 2, Sec. 3C.
- \_\_\_\_\_ "The Discovery of New Mexico Reconsidered," New Mex. Hist. Rev., Vol. 12, pp. 270-287.
- \_\_\_\_\_ "Theme of Plant and Animal Destruction in Economic History," Journal Farm Econ., Vol. 20, pp. 765-775. (Pres. address, Pacific Coast Soc. Sci. Res. Conf.)
- 1941 "The Settlement of the Humid East," pp. 157-166 in Climate and Man, U. S. Dept. Agric. Yearbook.
- \_\_\_\_\_ "Foreword to Historical Geography," Annals of the A. A. G., Vol. 31, pp. 1-24. (Pres. address, Assoc. Am. Geog., 1940).
- \_\_\_\_\_ "The Personality of Mexico," Geogr. Rev., Vol. 31, pp. 353-364.
- 1944 "A Geographic Sketch of Early Man in America," Geogr. Rev., Vol. 34, pp. 529-573.
- 1945 "The Relation of Men to Nature in the Southwest . . . " The Huntington Library Quarterly, Vol. 8, pp. 115-151.

- 1947 "Early Relations of Man to Plants," Geogr. Rev., Vol. 37, pp. 1-25.
- 1948 "Environment and Culture During the Last Deglaciation,"  
Proc. Am. Phil. Soc., Vol. 92, pp. 65-77.  
"Colima of New Spain in the Sixteenth Century," Ibero-Americana,  
No. 29, pp. 1-104.
- 1950 "Grassland Climax, Fire and Men," Journal of Range Management,  
Vol. 3, pp. 16-21.
- 1951 "The March of Agriculture Across the Western World," Proc.  
Eighth American Scientific Conference, pp. 63-65.

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- 1930 "Pueblo Sites in Southeastern Arizona," Univ. of Calif. Publ.  
in Geogr., Vol. 3, pp. 415-18.
- 1931 "Prehistoric Settlements of Sonora with special reference to  
Cenos de Trincheras," Univ. of Calif. Publ. in Geogr., Vol. 5,  
pp. 67-148.
- 1932 "Aztatlan: Prehistoric American Frontier on the Pacific Coast,"  
Ibero-Americana, No. 1, pp. 1-92.

WITH PEVERIL MEIGS

- 1927 "Lower California Studies I: Site and Culture at San Fernando  
de Velicata," Univ. of Calif. Publ. in Geogr., Vol. 2, pp. 271-302.
38. In Brown, R. H. "Materials bearing upon the geography of the  
Atlantic Seaboard, 1790-1810," Annals of the Association of American  
Geographers, Vol. 28 (1938), pp. 201-231. (Reference on pp. 201-204.)
39. The use of this translation of landschaft and its varied inter-  
pretation in America largely stems from Sauer's 1925 paper (see note 37) which  
so greatly influenced the geographers of the next decade and a half.

40. Whittlesey, D., "Sequent Occupance," Annals of the Association of American Geographers, Vol. 19 (1929), pp. 162-165.

41. p. 451 of Whittlesey, D., "Coastland and Interior Mountain Valley: A Geographical Study of two typical localities in Northern New England," pp. 446-458 in Wright, J. K. (ed.) New England's Prospect, Am. Geog. Soc. Special Publication No. 16, New York, 1933.

42. James, P. E. "The Blackstone Valley," Annals of the Association of American Geographers, Vol. 19 (1929), pp. 67-109; Goldthwait, J. W. "A Town That Has Gone Downhill," Geographical Review, Vol. 17 (1927), pp. 527-552; and Hall, R. B. "Tokaido: Road and Region," Geographical Review, Vol. 27 (1937), pp. 353-377.

43. A few of Glenn T. Trewartha's studies of interest here include: "The Prairie du Chien Terrace: Geography of a Confluence Site," Annals of the Association of American Geographers, Vol. 22 (1932), pp. 119-158; "French Settlement in the Driftless Hill Land," Annals of the Association of American Geographers, Vol. 28 (1938), pp. 179-200; "A Second Episode of Destructive Occupance in the Driftless Hill Land, 1760-1832," Annals of the Association of American Geographers, Vol. 30 (1940), pp. 109-142; "Climate and Settlement of the Subhumid Lands," pp. 167-176 in Climate and Man, U. S. Dept. of Agri. Yearbook, 1941; "Population and Settlements in the Upper Mississippi Hill Land during the period of destructive exploitation (1670-1832)," pp. 183-196 in Proceedings of the Eighth Scientific Congress, Washington, May 8-10, 1940 (Washington, 1943); "The Unincorporated Hamlet: One Element of the American Settlement Fabric," Annals of the Association of American Geographers, Vol. 33 (1943), pp. 32-81; and "Types of Rural Settlement in Colonial America,"

Geographical Review, Vol. 36 (1946), pp. 568-596.

44. Parkins, A. E., The South: Its Economic-Geographic Development, New York, 1938.

45. Some of Joe Russell Whitaker's relevant bibliography:  
 "Negaunee, Michigan; An Urban Center Dominated by Iron Mining," Bull. Geogr. Soc. Phila., Vol. 29, 1931, pp. 137-174, 215-240, and 306-339; "The Development of the Tobacco Industry of Kentucky; a Geographical Interpretation," ibid., Vol. 27, 1929, pp. 15-22; "Regional Contrasts in the Growth of Canadian Cities," Scot. Geogr. Mag., Vol. 53, 1937, pp. 373-379, "Our Forests, Past and Present," pp. 229-250 of Parkins, A. E. and Whitaker, J. R., Our Natural Resources and Their Conservation, New York, 1939; "Earth Factors in Settlement and Land Use," Tenn. Hist. Quarterly, Vol. 5, 1946, pp. 195-211; and, "Historical Geography in School and College," Peabody Journal of Education, Vol. 27, 1949, pp. 3-15.

46. Examples for Stanley D. Dodge include: "Sequent Occupance of an Illinois Prairie," Bull. Geogr. Soc. Phila., Vol. 29, 1931, pp. 205-209; "A Study of Population in Vermont and New Hampshire," Papers Mich. Acad. Sci. Arts and Letters, Vol. 18, 1933, pp. 131-136; "The Frontier of New England in the Seventeenth and Eighteenth Centuries and its Significance in American History," ibid., Vol. 28, 1942, pp. 435-439; and, "Periods in the Population History of the United States," ibid., Vol. 32, 1946 (published 1948), pp. 253-260.

47. Especially, Whittlesey, D., Environmental Foundations of European History, New York, 1949; and Wright, J. K., The Geographical Basis of European History, New York, 1928.

48. Of particular interest are his 1925 paper "The Morphology of

Landscape," his presidential address of 1940 to the Association, "Foreward to Historical Geography," Annals of the Association of American Geographers, Vol. 31 (1941), pp. 1-24, (~~See note 37~~), and Richard Hartshorne's detailed criticism of these and others of Sauer's writings in the latter's Nature of Geography (2nd ed. with added bibliography and notes) Ann Arbor, 1946.

The committee has declined a detailed methodological debate here, largely in the interests of space conservation, but its point of view, while neither that of Sauer nor Hartshorne, is clearly much closer to the expressed position of the former. Three of the committee members, indeed, have been members of Sauer's graduate seminars. There is a large, relevant methodological bibliography and argumentative treatment may be appropriate later in another medium.

49. See Sauer's 1924 paper (note 37).

50. Broek, J. O. M., The Santa Clara Valley, California; a Study in Landscape Change, Utrecht, 1932; idem, "The Relations Between Geography and History," Pacific Historical Review, Vol. 10, 1943, pp. 321-25; and Weaver, J.C. "Barley in the United States: A Historical Sketch," Geographical Review, Vol. 33 (1943), pp. 56-73. Broek submitted his dissertation on the Santa Clara valley at Utrecht and, Weaver his barley opus at Wisconsin. Broek subsequently returned to Berkeley as a member of the department for many years and, with John Leighly and John Kesseli, saw to it that the Berkeley students, enthused or inspired by Sauer or themselves, obtained the careful, systematic training without which the inspiration must have been abortive.

51. Oscar Schmieder published two pertinent items in English while at Berkeley, both in the Univ. of Calif., Publ. in Geog.: "The Pampa - a Natural or Culturally Induced Grassland?", Vol. 2, 1927, pp. 255-270 and

"The Historical Geography of Tucuman," Vol. 2, 1928, pp. 359-386.

52. E. g. Brand, Bruman, McBryde, Meigs, Parsons, Stanislawski, and West. Brand and Meigs both published jointly with Sauer (See note 37). Other illustrative bibliography includes: Brand, D. D., "The Historical Geography of Northwestern Chihuahua," (Univ. of Calif., Ph. D. dissertation, 1934); Bruman, H. J. "Aboriginal Drink Areas in New Spain," (Dissertation, 1940); idem, "Some Observations on the Early History of the Cocomut in the New World," Acta Americana, Vol. 2, 1944, pp. 220-243; McBryde, F. W., "Native Economy of Southwestern Guatemala and its Natural Background," (Dissertation, 1941); idem, "Cultural and Historical Geography of Southwest Guatemala," Smithsonian Institution, Inst. of Soc. Anthropol., Publ. No. 4, Washington, 1925, 184 pp.; Meigs, P., "The Dominican Missions of Lower California; a Chapter in Historical Geography," (Dissertation, 1932) and its publication as "The Dominican Mission Frontier of Lower California," Univ. of Calif. Publ. in Geogr., Vol. 7, 1935, pp. 1-192; Parsons, J. J. "Antioqueno Colonization in Western Colombia," (Dissertation, 1948) and its publication under the same name in Ibero-Americana, No. 32, 1949, 225 pp.; Stanislawski, D. "The Historical Geography of Michoacan," (Dissertation, 1944); idem, "The Origin and Spread of the Grid-Pattern Town," Geographical Review, Vol. 36 (1946), pp. 105-120; idem, "The Political Rivalry of Patzcuaro and Morelia, an Item in the Sixteenth Century Geography of Mexico," Annals of the A. A. G., Vol. 37 (1947), pp. 135-144; idem, "Early Spanish Town Planning in the New World," Geographical Review, Vol. 37 (1947), pp. 94-105; idem, "The Anatomy of Eleven Towns in Michoacan," Univ. of Texas Inst. of Latin Am. Studies, Latin American Studies, No. 10, Austin, 1950, 77 pp.; and, West, R. C., "The Economic

Structure of the Mining Community in Northern New Spain; The Parral Mining District," and its expanded publication in Ibero-Americana, No. 30, 1949, 169 pp.

53. E.g., Carter, Clark, Kniffen, Price, Rau, Raup, and Spencer. Illustrative bibliography includes: Carter, G. F., "Plant Geography and Culture History in the American Southwest," Viking Fund Publ. in Anthropol., No. 5, New York, 1945, 140 pp.; idem, "Origins of American Indian Agriculture," Am. Anthropol., Vol. 48, 1946, pp. 1-21; idem, "Plant Evidence for Early Contacts with America," Southwestern Journal Anthropol., Vol. 6, 1950, pp. 161-182; idem, "Evidence for Pleistocene Man in Southern California," Geographical Review, Vol. 40 (1950), pp. 84-102; Clark, A. H. "Historical Explanation of Land Use in New Zealand," Journal Ec. Hist., Vol. 5, 1945, pp. 215-230; idem, "Field Research in Historical Geography," The Professional Geographer (old series) Vol. 4, 1946, pp. 13-22; idem, The Invasion of New Zealand by People, Plants and Animals: The South Island, New Brunswick, 1949 (rev. and enl. of dissertation, 1944); Kniffen, F. B., "Lower California Studies III: The Primitive Cultural Landscape of the Colorado Delta," Univ. of Calif. Publ. in Geogr., Vol. 5, 1931, pp. 43-66 (from dissertation, 1930); idem, "The American Agricultural Fair: Time and Place," Annals of the A. A. G., (1951), pp. 42-57; idem, "American Covered Bridge," Geographical Review, Vol. 41 (1951), pp. 114-123; Price, E. T., "Mixed Blood Populations of the Eastern United States as to Origins, Localizations and Persistence," (Dissertation, 1950); idem, "The Melungeons: A Mixed-Blood Strain of the Southern Appalachians," Geographical Review, Vol. 41, (1951), pp. 256-271. Raup, H. F. "The German Colonization of Anaheim, California," Univ. of Calif. Publ. in Geogr., Vol. 6, 1932, pp. 123-146; idem, "Settlement and

Settlement Forms of the Pennsylvania Dutch at the Forks of the Delaware, Northampton County, Pennsylvania" (Dissertation, 1935); idem, "Place Names of the California Gold Rush," Geographical Review, Vol. 35 (1945), pp. 653-658; Rostlund, E., "A Distribution Study of Fresh-water Fish and Fishing in Original America North of Mexico," (Dissertation, 1951); Spencer, J. E. "The Middle Virgin River Valley, Utah: A Study of Culture Growth and Change" (Dissertation, 1937); and, idem, "Changing Chungking: The Rebuilding of An Old Chinese City," Geographical Review, Vol. 29 (1939), pp. 46-60.

54. Leighly, J. B., "The Towns of Mälardalen in Sweden. A Study in Urban Morphology," Univ. of Calif. Publ. in Geogr., Vol. 3, 1928, pp. 1-134 (from dissertation, 1927); idem, "The Towns of Medieval Livonia," ibid., Vol. 6, 1939, pp. 235-314; idem, "Settlement and cultivation in the summer-dry climates," pp. 197-204 in Climate and Man, U. S. Dept. of Agric. Yearbook, 1941; Thornthwaite, C. W., "Louisville, Kentucky: A Study in Urban Morphology" (Dissertation, 1930); and, idem, "Climate and Settlement in the Great Plains," pp. 177-187 in Climate and Man, U. S. Dept. of Agric. Yearbook, 1941.

55. The dissertations (with some other items) include: Michigan: Black, L. D., "The Peopling of the Middle Willamette Valley, Oregon" (1940); Glendinning, R. M., "The Lake St. John Lowland" (1935), abridged in Papers of the Mich. Acad. of Sciences, Arts and Letters, Vol. 20, 1934, pp. 313-341; Guthe, O. E. "The Black Hills of South Dakota and Wyoming" (1933), abridged in ibid. Vol. 20, 1934, pp. 343-376; and Kohn, C. F., "Distribution of Population in the Middle Piscataquis Valley, Maine" (1940). Chicago: Espenshade, E. B., "Urban Developments at the Upper Rapids of the Mississippi" (1943); Torbert, E. N. "The Evolution of Land Utilization in

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56. See note 37 above.

57. Sauer, C. O., "Foreward to Historical Geography," Annals of the Association of American Geographers, Vol. 31 (1941), pp. 1-24. Ref. pp. 17-23.

58. For Marsh see note 29; Sherlock, R. L., Man as a Geological Agent, London, 1922 is the latter's most famous relevant work.

59. Sauer, C. O., op. cit., note 57 p. 15. He goes on to give examples of such relics and fossils.

60. Herman Friis' best known study is, perhaps, "A Series of Population Maps of the Colonies and the United States, 1625-1790" Am. Geogr. Soc. Mimeo. Publ. No. 3, New York, 1940, 46 pp. The text and notes are even more valuable than the maps they supplement.

61. These remarks, part of a discussion, prepared for a meeting of the

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meeting; of the Association of American Geographers in Madison, in 1949, between Sauer, J. Russell Smith and Isaiah Bowman, were read there by Andrew Clark in Sauer's absence and have never hitherto been published.