To stay at home in the environment of familiar ideas is no doubt a safe course, but it does not make for advancement. Morphology, I believe, has as great a future before it as it has a past behind it, but it can only realize that future by leaving its old home, with all its comfortable furniture of well-worn rules and methods, and embarking on a journey, the first stages of which will certainly be uncomfortable and the end is far to seek.

G. C. Bourne

GEOGRAPHY AND SOME OF ITS MORE PRESSING NEEDS[1]

At the close of a reign which has practically coincided with the first decade of a new century, it is natural to look back and summarize the progress of geography during the decade. At the beginning of a new reign it is equally natural to consider the future. Our new sovereign is one of the most traveled of men. No monarch knows the world as he knows it; no monarch has ruled over a larger empire or seen more of his dominions. His advice has been to wake up, to consider and to act. It will be in consonance with this advice if I pay more attention to the geography of the future than to that of the past, and say more about its applications than about its origins.

Yet I do so with some reluctance, for the last decade has been one of the most active and interesting in the history of our science. The measurement of new and the remeasurement of old arcs will give us better data for determining the size and shape of the earth. Surveys of all kinds, from the simple route sketches of the traveler to the elaborate cadastral surveys of some of the more populous and settled regions have so extended our knowledge of the surface features of the earth that a map on the scale of 1,000,000 is not merely planned, but actually partly executed. Such surveys and such maps are the indispensable basis of our science, and I might say much about the need for accurate topographical surveys. This, however, has been done very fully by some of my predecessors in this chair in recent years.

The progress of oceanography has also been great. The soundings of our own and other admiralties, of scientific oceanographical expeditions, and those made for the purpose of laying cables, have given us much more detailed knowledge of the irregularities of the ocean floor. An international map of oceanic contours due to the inspiration and munificence of the prince of oceanographers and of Monaco has been issued during the decade, and so much new material has accumulated that it is now being revised. A comparison of the old and new editions of Krümmel's "Ozeanographie" shows us the immense advances in this subject.

Great progress has been made on the geographical side of meteorology and climate. The importance of this knowledge for tropical agriculture and hygiene has led to an increase of meteorological stations all over the hot belt—the results of which will be of immense value to the geographer. Mr. Bartholomew's "Atlas of Meteorology" appeared at the beginning, and Sir John Eliot's "Meteorological Atlas of India" at the end of the decade. Dr. Hann's "Lehrbuch" and the new edition of his "Climatology," Messrs. Hildebrandsson and Teisserenc de Bort's great work, "The Study of the Upper Atmosphere," are among the landmarks of progress. The record is marred only by the closing of Ben Nevis Observatory. A comparison of the present number and dis-

[1] Address to the Geographical Section of the British Association for the Advancement of Science, Sheffield, 1910.

tribution of meteorological stations with those given in Bartholomew's atlas would show how great the extension of this work is.

I have not time to recapitulate the innumerable studies of geographical value issued by many meteorological services, observatories and observers—public and private—but I may call attention to the improved weather maps and to the excellent pilot charts of the North Atlantic and of the Indian Ocean published monthly by our Meteorological Office.

Lake studies have also been a feature of this decade, and none are so complete or so valuable as the Scottish Lakes Survey—a work of national importance, undertaken by private enthusiasm and generosity. We have to congratulate Sir John Murray and Mr. Pullar on the completion of a great work.

In geology I might note that we now possess a map of Europe on a scale of 1:1,500,000 prepared by international cooperation and also one of North America on a smaller scale. The thanks and congratulations of all geographers are due to Professor Suess on the conclusion of his classical study of the face of the earth, the first comprehensive study of the main divisions and characteristics of its skeleton. English readers are indebted to Professor and Miss Sollas for the brilliant English translation which they have prepared.

A new movement, inspired mainly by Professor Flahault in France, Professor Geddes in this country, Professors Engler, Drude and Schimper in Germany has arisen among botanists, and at last we have some modern botanical geography which is really valuable to the geographer. I wish we could report similar progress in zoological geography, but that, I trust, will come in the next decade.

I pass over the various expensive arbitrations and commissions to settle boundary disputes which have in many cases been due to geographical ignorance, also the important and fascinating problems of the growth of our knowledge of the distribution of economic products and powers existing and potential, and the new geographical problems for statesmen due to the industrial revolution in Japan and China.

It is quite impossible to deal with the exploration of the decade. Even in the past two years we have had Peary and Shackleton, Stein and Hedin, the Duke of the Abruzzi, and a host of others returning to tell us of unknown or little known parts of the globe. We hope to hear some of the results of latest investigations from Dr. Charcot.

We wish success to Scott and his companions, to Bruce, Amundsen, Filchner, and others, British, American, German, or whatever nationality, who go to the south or north polar ice worlds, to Longstaff, Bruce, and others exploring the Himalayan regions, and to other geographical expeditions too numerous to mention.

One word of caution may, perhaps, be permitted. There is a tendency on the part of the public to confuse geographical exploration and sport. The newspaper reporter naturally lays stress on the unusual in any expedition, the accidental rather than the essential, and those of us who have to examine the work of expeditions know how some have been unduly boomed because of some adventurous element, while others have not received adequate popular recognition because all went well. The fact that all went well is in itself a proof of competent organization. There is no excuse for us in this section if we fall into the journalist's mistake, and we shall certainly be acting against the interests of

both our science and our section if we do so.

It was not my intention in this address to raise the question of what is geography, but various circumstances make it desirable to say a few words upon it. We are all the victims of the geographical teaching of our youth, and it is easy to understand how those who have retained unchanged the conceptions of geography they gained at school many years ago cavil at the recognition of geography as a branch of science. Moreover the geography of the schools still colors the conceptions of some geographers who have nevertheless done much to make school geography scientific and educational. Many definitions of geography are consequently too much limited by the arbitrary but traditional division of school subjects. In schools tradition and practical convenience have on the whole rightly determined the scope of the different subjects. Geography in schools is best defined as the study of the earth as the home of man; its limits should not be too closely scrutinized, and it should be used freely as a coordinating subject.

The present division into sections of the British association is also largely a matter of practical convenience, but we are told that the present illogical arrangement of sections distresses some minds. No doubt there are some curious anomalies. The most glaring, perhaps, is that of combining mathematics with physics—as if mathematical methods were used in no other subjects.

There is a universal tendency to subdivision and an ever-increasing specialism, but there is also an ever-growing interdependence of different parts of science which the British Association is unquestionably bound to take into account. At present this is chiefly done by joint meetings of sections, a wise course, of which this section has been one of the chief promoters. It is possible that some more systematic grouping of sections might be well advised, but such a reform should be systematic and not piecemeal. It is one which raises the whole question of the classification of knowledge. This is so vast a problem and one on which such divergent opinions are held that I must apologize for venturing to put forward some tentative suggestions.

It might be found desirable to take as primary divisions the mathematical, physical, biological, anthropological and geographical groups. Statistics might be regarded as a subdivision of mathematics or as a field common to mathematics and any of the other groups. In the second might be the subdivisions physics and chemistry. Each would devote a certain proportion of time to its applied aspects—or there might be subsections on physics, which would include engineering and applied chemistry. In the biological group there would be botany, zoology, in both cases including paleontology and embryology, and applied biology, which would be dealt with in one or other of the ways I have suggested, and would include agriculture, fisheries, etc. (Medicine we leave out at present.) In the psychological group there would be a new section on psychology, with the education section as the practical appendage. Mathematical application would be considered in each of the other sections which use mathematical notations. In the anthropological group there would be the present anthropology and theoretical economics with applied economics and administration. In the geographical group there would be geography and geology, the practical applications of geography being considered in joint meetings, or subsections—for instance, geography and physics for questions of atmospheric and oceanic circula-

tion, geography and economics for questions of transportation, etc.

So much, then, for the classification of geography with reference to the other sciences. I should like to say a few words about geographical classification and geographical terminology.

In the scheme of the universe it is possible to consider the earth as a unit, with its own constitution and history. It has an individuality of its own, though for the astronomer it is only one example of a particular type of heavenly bodies. As geographers we take it as our unit individual in the same way that an anatomist takes a man. We see that it is composed of different parts and we try to discover what these are, of what they are composed, what their function is, what has been their history.

The fundamental division is into land, water and air. Each has its forms and its movements. The forms are more obvious and persistent in the land. They are least so in the atmosphere, though forms exist—some of which are at times made visible by clouds, and many can be clearly discerned on isobaric charts. The land is the temporarily permanent; the water and atmosphere the persistently mobile; the latter more so than the former. The stable forms of the land help to control the distribution and movements of the waters and to a less extent those of the atmosphere. How great the influence of the distribution of land and water is on the atmosphere may be seen in the monsoon region of eastern Asia.

We can analyze and classify the subdivision of the land, the water, and the atmosphere. Each has given rise to a special branch of study.

Geomorphology deals with the forms of the land and their shaping—geomorphology, oceanography and climatology. Three things have to be kept clearly in view: (i) the structure, including the composition, of the more permanent substance of the form; (ii) the forces which are modifying it; and (iii) the phase in the cycle of forms characteristic of such structure acted on by such forms. We may say that any form is a function of structure, process and time. The matter is even more complicated, for we have instances, *e. g.*, in antecedent drainage systems, of the conditions of a previous cycle affecting a subsequent one—a kind of heredity of forms which can not be neglected.

The geomorphologist is seeking for a genetic classification of forms, and in the works of Davis, Penck, Richtofen and Supan and their pupils are being accumulated the materials for a more complete and systematic classification of forms. As you all know, the question of terms for the manifold land-forms is a difficult one and apt to engender much more controversy than the analysis of the forms themselves. I have long thought that we shall be driven to some notation analogous to that of the chemists. I have not yet had time to work such a notation out in detail, but it might take the form of using different symbols for the three factors noted above —say, letters for different kinds of structure, and, say, Arabic figures for processes, and Roman figures for the stage of a cycle the form has reached.

Take a very simple set of structures and indicate each by a letter:

Structure	homogeneous		A	A′
	layered	horizontal	B	B′
		tilted	C	C′
		folded	D	D′
	mixed		E	E′

If pervious or impervious, a *p* or an *i* could be added—*e. g.*, a tilted limestone with faults would be C′*p*.

Next indicate the commoner erosion processes by Arabic numerals:

Process	surface water	1
	ice	2
	wind	3
	sea	4

One process may have followed another, *e. g.*, where a long period of ice erosion has been followed by water erosion we might write 21 where these alternate annually, say 2.1.

The phase of the cycle might be denoted by Roman figures. A scale of V. might be adopted and I., III. and V. used for youthful, middle-aged and old-aged, as Professor Davis calls them; or early, middle and late phases, as I shall prefer to term them. II. and IV. would denote intermediate stages.

A scarped limestone ridge in a relatively mature phase like the Cotswolds would be —if we put the process first—1 C^1 III.; a highland like the southern Uplands of Scotland would be denoted by the formula 1. 2.1 E^1 III.

This is the roughest suggestion, but it shows how we could label our cases of notes, and pigeon-hole our types of forms —and prevent for the present undue quarrelling over terms. No doubt there would be many discussions about the exact phase of the cycle, for example, whether ice in addition to water has been an agent in shaping this or that form. But, after all, these discussions would be more profitable than quarrels as to which descriptive term, or place name, or local usage should be adopted to distinguish it.

In the case of climatology, there is coming to be a general consensus of opinion as to what are the chief natural divisions, and the use of figures and letters to indicate them has been followed by several authors. This should also be attempted for oceanography.

If any international agreement of symbols and colors could be come to for such things it would be a great gain, and I hope to bring this matter before the next international geographical congress.

We have still to come to geography itself. What are the units smaller than the whole earth with which our science has to deal? When we fix our attention on parts of the earth, and ask what is a natural unit, we are hampered by preconceptions. We recognize species, or genera, families or races as units—but they are abstract rather than concrete units. Speaking for myself, I should say that every visible concrete natural unit on the earth's surface consisting of more than one organic individual is a geographical unit. It is a common difficulty not to be able to see the wood for the trees; it is still more difficult to recognize that the wood consists of more than trees, that it is a complex of trees and other vegetation, fixed to a definite part of the solid earth and bathed in air.

The family, the species and the race are abstract ideas. If we consider them as units, it is because they have a certain historical continuity. They have not an actual physical continuity as the component parts of an individual have. Concrete physical continuity is what differentiates the geographical unit. We may speak of a town or state as composed of people, but a complete conception of either must include the spacial connections which unite its parts. A town is not merely an association of individuals, nor is it simply a piece of land covered with streets and buildings; it is a combination of both.

In determining the greater geographical units, man need not be taken into account. We are too much influenced by the mobility of man, by his power to pass from one region to another, and we are apt to forget that his influence on his environment is

negligible except when we are dealing with relatively small units. The geographer will not neglect man; he will merely be careful to prevent himself from being unduly influenced by the human factor in selecting his major units.

Some geographers and many geologists have suggested that land forms alone need be taken into account in determining these geographical units. Every different recognizable land form is undoubtedly a geographical unit. A great mountain system, such as that of western North America, or a vast lowland, such as that which lies to the east of the Rocky Mountains, is undoubtedly a geographical unit of great importance, but its subdivisions are not wholly orographical. The shores of the Gulf of Mexico can not be considered as similar geographically to those of the Arctic Ocean, even if they are morphologically homologous. I wish to lay great stress on the significance of vegetation to the geographer for the purposes of regional classification. I do not wish to employ a biological terminology nor to raise false analogies between the individual organism and the larger units of which it is a part, but I think we should do well to consider what may be called the life or movement going on in our units as well as their form. We must consider the seasonal changes of its atmospheric and of its water movements, as well as the parts of the earth's crust which they move over and even slightly modify. For this purpose a study of climatic regions is as necessary as a study of morphological regions. The lowlands of the Arctic area are very different from those at or near the tropics. The rhythm of their life is different, and this difference is revealed in the differences of vegetation.

By vegetation I mean not the flora, the historically related elements, but the vegetable coating, the space-related elements. Vegetation in this sense is a geographical phenomenon of fundamental importance. It indicates quality—quality of atmosphere and quality of soil. It is a visible synthesis of the climatic and edaphic elements. Hence the vast lowlands of relatively uniform land features are properly divided into regions according to vegetation—tundra, pine forest, deciduous forest, warm evergreen forest, steppe and scrub. Such differences of vegetation are full of significance even in mountainous areas.

The search after geographical unity—after general features common to recognizable divisions of the earth's surface, the analysis of these, their classification into types, the comparisons between different examples of the types—seem to me among the first duties of a geographer. Two sets of maps are essential—topographical and vegetational—the first giving the superficial topography and as far as possible its surface irregularities, the latter indicating quality of climate and soil.

Much has been said in recent years—more particularly from this presidential chair—on the need for reliable topographical maps. Without such maps no others can be made. But when they are being made it would be very easy to have a general vegetational map compiled. Such maps are even more fundamental than geological maps, and they can be constructed more rapidly and cheaply. Every settled country, and more particularly every partially settled country, will find them invaluable if there is to be any intelligent and systematic utilization of the products of the country.

The geographer's task I am assuming is to study environments, to examine the forms and qualities of the earth's surface, and to recognize, define and classify the different kinds of natural units into which

it can be divided. For these we have not as yet even names. It may seem absurd that there should be this want of terms in a subject which is associated in the minds of most people with a superfluity of names. I have elsewhere suggested the use of the terms major natural region, natural region, district and locality to represent different grades of geographical units, and have also attempted to map the seventy or eighty major natural regions into which the earth's surface is divided, and to classify them into about twenty types. These tentative divisions will necessarily become more accurate as research proceeds, and the minor natural regions into which each major natural region should be divided will be definitely recognized, described and classified. Before this can be done, however, the study of geomorphology and of plant formations must be carried far beyond the present limits.

At the opposite end of the scale, that is, in the geographical study of localities, good work is beginning to be done. Dr. H. R. Mill, one of the pioneers of geography in this country and one of my most distinguished predecessors in this chair, has given us in his study of southwest Sussex an admirable example of a geographical monograph proper, which takes into account the whole of the geographical factors involved. He has employed quantitative methods as far as these could be applied, and in doing so has made a great step in advance. Quantitative determinations are at least as essential in geographical research as the consideration of the time factor.

The geomorphologist and the sociologist have also busied themselves with particular aspects of selected localities. Professor W. M. Davis, of Harvard, has published geomorphological monographs which are invaluable as models of what such work should be. In a number of cases he has passed beyond mere morphology and has called attention to the organic responses associated with each land form. Some of the monographs published under the supervision of the late Professor Ratzel, of Leipzig, bring out very clearly the relation between organic and inorganic distributions, and some of the monographs of the Le Play school incidentally do the same.

At present there is a double need. Research may take the form, in the first place, of collecting new information, or, in the second place, of working up the material which is continually being accumulated.

The first task—that of collecting new information—is no small one. In many cases it must be undertaken on a scale that can be financed only by governments. The ordnance and geological surveys of our own and other countries are examples of government departments carrying on this work. We need more of them. We need urgently a hydrographical department, which would cooperate with Dr. Mill's rainfall organization. It would be one of the tasks of this department to extend and coordinate the observations on river and lake discharge, which are so important from an economic or health point of view that various public bodies have had to make such investigations for the drainage areas which they control. Such research work as that done by Dr. Strahan for the Exe and Medway would be of the greatest value to such a department, which ought to prepare a map showing all existing water rights, public and private.

We shall see how serious the absence of such a department is if we consider how our water supply is limited, and how much of it is not used to the best advantage. We must know its average quantity and the extreme variations of supply. We must also

know what water is already assigned to the uses of persons and corporations, and what water is still available. We shall have to differentiate between water for the personal use of man and animals, and water for industrial purposes. The actualities and the potentialities can be ascertained and should be recorded and mapped.

In the second direction of research—that of treating from the geographical standpoint the data accumulated, whether by government departments or by private initiative—work has as yet hardly been begun.

The topographical work of the ordnance survey is the basis of all geographical work in our country. The survey has issued many excellent maps, none more so than the recently published half-inch contoured and hill-shaded maps with colors "in layers." Its maps are not all above criticism; for instance, few can be obtained for the whole kingdom having precisely the same symbols. It has not undertaken some of the work that should have been done by a national cartographic service—for instance, the lake survey. Nor has it yet done what the geological survey has done—published descriptive accounts of the facts represented on each sheet of the map. From every point of view this is a great defect; but in making these criticisms we must not forget (*a*) that the treasury is not always willing to find the necessary money, and (*b*) that the ordnance survey was primarily made for military purposes, and that the latest map it has issued has been prepared for military reasons. It has been carried out by men who were soldiers first and topographers after, and did not necessarily possess geographical interests. The ideal geographical map, with its accompanying geographical memoir, can be produced only by those who have had a geographical training. Dr. Mill, in the monograph already referred to, has shown us how to prepare systematized descriptions of the one-inch map sheets issued by the ordnance survey.

At Oxford we are continuing Dr. Mill's work. We require our diploma students to select some district shown on a sheet of this map for detailed study by means of map measurements, an examination of statistics and literature which throw light on the geographical conditions, and, above all, by field work in the selected district. Every year we are accumulating more of these district monographs, which ought, in their turn, to be used for compiling regional monographs dealing with the larger natural areas. In recent years excellent examples of such regional monographs have come from France and from Germany.

The preparation of such monographs would seem to fall within the province of the ordnance survey. If this is impossible, the American plan might be adopted. There the geological survey, which is also a topographical one, is glad to obtain the services of professors and lecturers who are willing to undertake work in the field during vacations. It should not be difficult to arrange similar cooperation between the universities and the ordnance survey in this country. At present the schools of geography at Oxford and at the London School of Economics are the only university departments which have paid attention to the preparation of such monographs, but other universities will probably fall into line. Both the universities and the ordnance survey would gain by such cooperation. The chief obstacle is the expense of publication. This might reasonably be made a charge on the ordnance survey, on condition that each monograph published were approved by a small com-

mittee on which both the universities and the ordnance survey were represented.

The information which many other government departments are accumulating would also become much more valuable if it were discussed geographically. Much excellent geographical work is done by the admiralty and the war office. The meteorological office collects statistics of the weather conditions from a limited number of stations; but its work is supplemented by private societies which are not well enough off to discuss the observations they publish with the detail which these observations deserve. The board of agriculture and fisheries has detailed statistical information as to crops and live stock for the geographer to work up. From the board of trade he would obtain industrial and commercial data, and from the local government board vital and other demographic statistics. At present most of the information of these departments is only published in statistical tables.

Statistics are all very well, but they are usually published in a tabular form, which is the least intelligible of all. Statistics should be mapped and not merely be set out in columns of figures. Many dull blue books would be more interesting and more widely used if their facts were properly mapped. I say *properly* mapped because most examples of so-called statistical maps are merely crude diagrams and are often actually misleading. It requires a knowledge of geography in addition to an understanding of statistical methods to prepare intelligible statistical maps. If Mr. Bosse's maps of population of England and Wales in Bartholomew's survey atlas are compared with ordinary ones the difference between a geographical map and a cartographic diagram will be easily appreciated.

The coming census, and to a certain extent the census of production, and probably the new land valuation, will give more valuable raw material for geographical treatment. If these are published merely in tabular form they will not be studied by any but a few experts. Give a geographer with a proper staff the task of mapping them in a truly geographical way and they will be eagerly examined even by the man in the street, who can not fail to learn from them. The presentation of the true state of the country in a clear, graphic and intelligible form is a patriotic piece of work which the government should undertake. It would add relatively little to the cost of the census and it would infinitely increase its value.

The double lack—the lacunæ in the information and the absence of adequate geographical treatment of such material as there is—makes the task of studying the huge natural divisions which we call continents a very difficult and unsatisfactory one. For several years in Oxford we have been trying to gather together the material available for the study of the continents and to make as accurate maps as is possible for geographical purposes. We have adopted uniform scales and methods, and by using equal area projections we have obtained comparative graphic representations of the facts. We hope before the end of the year to issue maps of physical features, vegetation and rainfall of each continent and other maps for the world. These are being measured, and I hope will yield more reliable quantitative information about the world and its continents than we possess at present.

With such quantitative information and with a fuller analysis of the major natural regions it ought to be possible to go a step further and to attempt to map the economic value of different regions at the present day. Such maps would necessarily be only approximations at first. Out of

them might grow other maps prophetic of economic possibilities. Prophecy in the scientific sense is an important outcome of geographical as well as of other scientific research. The test of geographical laws as of others is the pragmatic one. Prophecy is commonly but unduly derided. Mendelyeff's period law involved prophecies which have been splendidly verified. We no longer sneer at the weather prophet. Efficient action is based on knowledge of cause and consequence, and proves that a true forecast of the various factors has been made. Is it too much to look forward to the time when the geographical prospector, the geographer who can estimate potential geographical values, will be as common as and more reliable than the mining prospector?

The day will undoubtedly come when every government will have its geographical-statistical department dealing with its own and other countries—an information bureau for the administration corresponding to the department of special inquiries at the board of education. There is no geographical staff to deal geographically with economic matters or with administrative matters. Yet the recognition of and proper estimation of the geographical factor is going to be more and more important as the uttermost ends of the earth are bound together by visible steel lines and steel vessels or invisible impulses which require no artificial path or vessel as their vehicle.

The development of geographical research along these lines in our own country could give us an intelligence department of the kind, which is much needed. If this were also done by other states within the empire, an imperial intelligence department would gradually develop. Thinking in continents, to borrow an apt phrase from one of my predecessors, might then become part of the necessary equipment of a statesman instead of merely an after-dinner aspiration. The country which first gives this training to its statesmen will have an immeasurable advantage in the struggle for existence.

Our universities will naturally be the places where the men fit to constitute such an intelligence department will be trained. It is encouraging, therefore, to see that they are taking up a new attitude towards geography, and that the civil service commissioners, by making it a subject for the highest civil service examinations, are doing much to strengthen the hands of the universities. When the British Association last met in Sheffield geography was the most despised of school subjects, and it was quite unknown in the universities. It owed its first recognition as a subject of university status to the generous financial support of the Royal Geographical Society and the brilliant teaching of Mr. Mackinder at Oxford. Ten years ago schools of geography were struggling into existence at Oxford and Cambridge, under the auspices of the Royal Geographical Society. A single decade has seen the example of Oxford and Cambridge followed by nearly every university in Great Britain, the University of Sheffield among them. In Dr. Rudmore Brown it has secured a traveler and explorer of exceptionally wide experience, who will doubtless build up a department of geography worthy of this great industrial capital. The difficulty, however, in all universities is to find the funds necessary for the endowment, equipment and working expenses of a geographical department of the first rank. Such a department requires expensive instruments and apparatus, and, since the geographer has to take the whole world as his subject, it must spend largely on collecting, storing and utilizing raw material of the kind I have

spoken of. Moreover, a professor of geography should have seen much of the world before he is appointed, and it ought to be an important part of his professional duties to travel frequently and far. I have never been able to settle to my own satisfaction the maximum income which a department of geography might usefully spend, but I have had considerable experience of working a department with an income not very far above the minimum. Till this year the Oxford School of Geography has been obliged to content itself with three rooms and to make these suffice not merely for lecture-rooms and laboratories, but also for housing its large and valuable collection of maps and other materials. This collection is far beyond anything which any other university in this country possesses, but it shrinks into insignificance beside that of a rich and adequately supported geographical department like that of the University of Berlin. This fortunate department has an income of about 6,000*l.* a year and an institute built specially for its requirements at a cost of over 150,000*l.*, excluding the site. In Oxford we are only too grateful that the generosity of Mr. Bailey, of Johannesburg, has enabled the school of geography to add to its accommodation by renting for five years a private house, in which there will temporarily be room for our students and for our collections, but where we can never hope to do what we might if we had a building specially designed for geographical teaching and research. Again, Lord Brassey and Mr. Douglas Freshfield, a former president of this section, have each generously offered 500*l.* towards the endowment of a professorship if other support is forthcoming. All this is matter for congratulation, but I need hardly point out that a professor with only a precarious income for his department is a person in a far from enviable position. There is at present no permanent working income guaranteed to any geographical department in the country, and so long as this is the case the work of all these departments will be hampered and the training of a succession of competent men retarded. I do not think that I can conclude this brief address better than by appealing to those princes of industry who have made this great city what it is to provide for the geographical department of their university on a scale which shall make it at once a model and a stimulus to every other university in the country and to all benefactors of universities.

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University of Oxford

THE ASSOCIATION OF AMERICAN UNIVERSITIES

We learn from a report in the New York *Evening Post* that the Association of American Universities met at the University of Virginia last week. Three papers were presented by delegates. The first, by President Bryan, of Indiana University, was on "Allowing Credit for Professional Work to Count toward the Degree of Bachelor of Arts."

President Bryan is in favor of allowing students to complete requirements for this degree in a standard college of arts and sciences, and in a professional school, in seven years where the professional course requires four years, and in six years where the professional course requires three; also of granting two degrees when the work for them has been done simultaneously, but separately. Emphasis was laid upon the statement that there should be no discrimination against colleges connected with universities.

The second paper, by Professor Calvin Thomas, "The Degree of Master of Arts," defended the two propositions: that work for this degree should require intensive work in one study for at least one year, and that the candidate should have a bachelor's degree