prehistoric archaeologist, I can only add my humble testimony to that of others who think that this branch of anthropology is very unsatisfactorily dealt with by the metropolitan societies in which it is discussed. Quite recently this happy family has been increased by the birth of a fine child under the title of an Historical Society. I observed that by any special functions of this society, it commenced life with a paper on Prehistoric Man. But there are no signs of any limitation to this imprudent childbearing; it is announced that a Psychological Society is confidently expected. No one would be more disposed than myself to welcome psychology as a special branch of study if this family of gutter children is to go on increasing ad libitum; but it will be admitted that a Psychological Society, of all others, is liable to grow up scattered, if completely severed from the influence of its more experienced kinfolk.

It is not made it appear that Anthropology in its various branches includes some of the most popular and widely disseminated scientific interests of the country; that the loss of power is enormous; not only is there no means of organised exploration, but the information which is published is either repeated over and over again in the different societies, or it is so scattered as to be beyond the reach of the majority of the students. They labour also under the di-advantage of being supposed chiefly by men of small minds, for the well-do-to-do classes in this country do not, as a rule, take any interest in either the various anthropological institutions. During the past year, a single American has done more in the way of anthropological exploration than what the whole of the English societies, institutes, and associations together.

I will now briefly state my views as to the remedies for the evils of which we have spoken. I am averse to the principle of amalgamation; narrow views are often the most pronounced, and if they become dominant are likely to bring down the standard of an amalgamated society instead of enlarging its sphere of usefulness; besides, this amalgamation was necessarily entails a certain loss of identity by the loss of double subscriptions.

If my experience as a member of the council of most of the societies of which I speak does not deceive me, it should be the object of those who have the progress of anthropological studies at heart to induce the metropolitan societies to specialise their functions. The following might then become the titles of the various societies included under the term Anthropology, and they would represent not only the natural divisions of the science, but practically the divisions which are most convenient and suited to the requirements of various classes of special workers. These should constitute independent but associated societies; that is to say, the members of one should be privileged to attend the meetings and take part in the discussions of the others, but not to receive the publications of any but their own society. Each society means each would profit by the experience of the other societies, but the funds necessary for the maintenance of each would be secured. As branch sections of anthropology they would be under the control of a general council, elected annually, and in so far as the sectional societies shall desires, such meetings may be held on a local basis.

SECTION E

GEOGRAPHY

OPENING ADDRESS BY THE PRESIDENT, FRANCIS GALTON, F.R.S.

The functions of the several Sections of the British Association differ from those of other Institutions which pursue corresponding branches of science. We, who compose this Section, are not simply a Geographical Society, meeting in a hospitable and important provincial town, but we have a distinct individuality of our own. We have purposes to fulfil which are not easily to be overlooked; our objects should, and, on the other hand, we should, and, in the programme of our Society, are much more in line with the present and future requirements performed by Geographical Societies which we could not attempt without certain failure. Our peculiarities lie in the brief duration of our existence, combined with extraordinary opportunities for ventilating new ideas and plans, and of promoting the success of those that deserve to succeed. We are constructed of a great scientific organisation, which enables us to secure the attention of representatives of all branches of science to any projects in which we are engaged; and if those projects have enough merit to earn their deliberate approval, they must be fraught with results that are of great importance.
there is no reason to fear that the most interesting occupation of geographers will be gone, when the time comes when all the world is known. On the contrary, it is to be desired, in the interests of the living pursuit of our science, that the primary facts should be well ascertained, in order that geographers may have adequate materials, and more leisure to devote them- selves to generalizations. I look forward with the hope to the growth of Geography as a science, in the usually accepted sense of that word; for its problems are as numerous, as interesting, and as intricate as those of any other. The configuration of every land, its soil, its vegetable covering, its rivers, its climate, its animals, and human inhabitants, act and react upon one another. It is the highest problem of Geography to analyze their correlations, and to sift the casual from the essential. The more accurately the crude facts are known, the more surely will induction proceed, the further will it go, and, as the analogy of other sciences assures us, the interest of its results will in no way diminish.

As a comparatively simple instance of this, I would mention the mutual effects of climate and vegetation, on which we are at present very imperfectly informed, though I hope we shall learn much that is new and valuable during this meeting. Certain generalities apply to us: namely, that rain falling upon barren country drains away immediately. It ravages the hill-slopes, rushes in torrents over the plains, and rapidly finds its way to the sea, either by rivers or by subterranean water-courses, leaving the land unrefreshed and unproductive. On the other hand, if a mantle of forest be nursed into existence, the effects of each rainfall are far less sudden and transient. The water has to soak through much vegetation and humus before it is free to run over the surface; and, when it does so, the rapidity of its course is checked by the stems of the vegetation. Consequently, the rain-supplies are held back and stored by the action of the forest, and the climate among the trees becomes more equable and humid. We also are familiar with the large differences between the heat-radiating power of the forest and of the desert, also between the amount of the evaporation; but we have no accurate knowledge of any of these data. Still less do we know about the influences of forest and desert on the rate of passage, or on the horizontality, of the water-laden winds from the sea over the surface of the land: indeed, I am not aware that this subject has ever been considered, although it is an essential element in our problem. If we were thoroughly well informed on the matters about which I have been speaking, we might attempt to calculate the precise difference of climate under such and such conditions of desert and of forest, and the class of experiments which our data would suggest. We might even, with a little effort, furnish tests of the correctness of our computations. This will serve as an example of what I consider to be the geographical problems of the future; it is also an instance of the power of man over the phenomena of nature. He is not always a mere helpless and a passive recipient of their action, but he has power, in some degree, to control her processes, even when they are working on the largest scale. The effects of human agency on the aspect of the earth would be noticeable to an observer far removed from it. Even were he as distant as the moon is, he could see them; for the colour of the surface of the land would have greatly varied during historic times, and in some places the quantity and the drift of cloud would have perceptibly changed. It is a striking fact in the physical geography of the globe, that vast regions to the east of the Mediterranean, and broad1343 to the south of it, should have been changed from a state of verdure to one of aridity, and that immense European forests should have been felled.

We are beginning to look on our heritage of the earth much as a youth might look upon a large ancestral possession, long allowed to run waste, visited recently by him for the first time, whose boundaries he was learning, and whose capabilities he was beginning to appreciate. There are tracts in Africa, Australia, and at the Poles, not yet accessible to geographers, and wonders may be contained in them; but the region of the abode of the human race, as now occupied by man, is not a region whose boundaries are narrowing, and the carto1346 of the earth, though still brilliant, is inevitably coming to an end. The geographical work of the future is to obtain a truer knowledge of the world. I do not mean by accumulating masses of petty details, which subservise no common end, but by just and clear generalization. We want to know all that constitutes the world, though still individual, so to speak, of every geographical district, and to define and illustrate it in a way easily to be understood; and we have to use that knowledge to show how the efforts of our human race may best conform to the geographical conditions of the stage on which we live and labour.

I trust it will not be thought unprofitable, on an occasion like this, to have paused for a while, looking earnestly towards the future of our science, in order to refresh our eyes with a sight of the distant land to which we are bound, and to satisfy ourselves that our present efforts lead in a right direction. The work immediately before us is full of details, and now claims your attention. There is much to be done and discussed in this room, and I am charmed of wasting time by an address on general topics. It will be more profitable that I should lay before you two projects of my own about certain maps, which it is desirable that others should consider, and on which I shall hope to hear the opinions of my colleagues in the Committee-room of this Section.

They both refer to the Ordnance Maps of this country, and the first of them to the complete series well known to geographers, that are published to the scale of one inch to a mile. It is on these alone that I am about to speak; for, though many of my remarks will be applicable more or less to the other Government map publications, I think it better not to allude to them in direct terms, to avoid distracting attention by qualifications and exceptions.

English geographers are justly proud of theseOrdnance Maps of their country, whose accuracy and hill-shading are unsurpassed elsewhere, though the maps do not fulfil, in all particulars, legitimate desires. I shall not speak here of the absence from the coast-maps of the sea depths, such as the depth and character of the bed of the sea, its currents and its tides (although these are determined and published by another Department of the Government—namely, the Admiralty), neither shall I speak of the want of a more frequent revision of the sheets, but shall confine myself to what appears to be serious, though easily remediable, defects in the form and manner of their publication. It is much to be regretted that these beautiful and cheap maps are not more accessible. They are rarely to be found even in the principal bookseller's shops of important country towns, and I have never observed one on the railway station platform. Many educated persons seldom, if ever, see them; they are almost unknown to the middle and lower classes; and thus an important work, made at the expense of the public, is practically unavailable to a large majority of those interested in it, who, when they want a local map, are driven to use a common and inferior one out of those which have the command of the market. I am bound to add that this evil is not peculiar to our country, but is felt almost as strongly abroad, especially in respect to the principle of flat-sheeting; and one of the principal reasons. The first is, that the maps are always printed on stiff paper, which makes them cumbersome and unfit for immediate use; it requires large portolos or drawers to keep them smooth, clean, and in separate sets, and an unusually large table to lay them out in the comfort of home, for the selection of what is wanted. These conditions do not exist on the crossed counter of an ordinary bookseller's shop, where it is impossible to handle them without risk of injury, and without the certainty of inconveniencing other customers. Moreover, their stiffness and size, even when published in quarter-sheets, make them most inconvenient to the purchaser. Either he has to send them to be mounted on a substantial and therefore costly manner, or he must carry a roll home with him, and cut off the broad ornamental borders, and divide the sheet into compartments suitable for the pocket, which, to say the least, is a troublesome operation to perform with neatness. The other of the two reasons why the maps are rarely offered for sale, is that the agents for their publication are themselves map-makers, and therefore competitors, and it is not to be expected of human nature that they should push the sale of maps adversely, in however small a degree, to their own interests.

The remedy I shall propose for the consideration of the Committee of this Section is, to memorialise Government to cause an issue of the maps to be made in quarter-sheets on thin paper, printed on the outside, with an index-map impressed on its outside, to show its contents and those of the neighbouring sheets, as well as their distinguishing numbers. Also, I would ask that they should be sold at every "Head Post- Office," as well as at all those in the United Kingdom. There are about one hundred of these offices, and each may keep nine adjacent quarter-sheets in stock, the one in which it was situated being the centre of the nine. An index-map of the whole survey might be procurable.
Recalling what I have urged about the feasibility of largely increasing the accessibility and the sale of Government maps, by publishing them in a pocket form and selling them at the Head Post-offices, it seems to me a reasonable question for the committee of this section to consider whether Government might not be memorialised to consider the propriety of undertaking a reduced and cheaper form of survey than is now given to the public and to fulfil the demand to which the coarse country maps, which are so largely sold, are a sufficient testimony. The scale of the reduced Government map of France corresponds to what I have in view; it is one of five miles to an inch, within a trifle (375ths of a mile) of Nature, which is just large enough to show every lane and footpath. Of course it would be a somewhat costly undertaking to make such a map, but much less so than it might, at first sight, appear. Its area would be only twenty-fifth that of the ordinary ordnance map, and the hill-work of the latter might perhaps be photographically reduced and rendered available for the production of maps of the desirability of maps such as these, accurately executed and periodically revised, is undoubtedly, while it seems impossible that private enterprise should supply them except at a prohibitive cost, because private publishers are necessarily saddled with the onus of obtaining much of what the Ordnance Survey Office has already in hand for existing purposes. A Government department has unrivalled facilities for obtaining a knowledge of every alteration in roads, paths, and boundaries of commons, and Government also possesses an organised system in the post-office service, to be utilised in the production of an accurate route-seam, a natural corollary to that of the larger Ordnance maps, and has been considered so by many Continental Governments.

I therefore intend to propose to the committee of this section to consider the propriety of memorialising Government to cause inquiries to be made as to the cost of construction, and the probability of a remunerative sale, of maps such as those I have described; and, if the results are satisfactory, to undertake the production of a reduced Ordnance Map, on the same scale as that of France, to be published at a smaller cost, and to be frequently revised. These, then, are the two projects to which I alluded—the one designed to secure the sale of one-inch Ordnance Maps, on paper folded into a pocket form, to be sold at the Head Post-offices of the Kingdom—700 or thereabouts in number, each office keeping in stock the maps of the district in which it is situated; and the other to obtain a reduced Ordnance Map of the kingdom, on the scale of about five miles to an inch, to fulfil all the purposes of a road map, and to be sold throughout the country at Head Post-offices, in the way I have just described.

I will now conclude my Address, having sufficiently taxed your patience, and beg you to join with me in welcoming, with your best attention, the eminent geographers whose communications are about to be submitted to your notice.

**Sectional Proceedings—Friday, August 16**

**Discoveries at the Northern End of Lake Tanganyika, by H. M. Stanley.**

The President, Mr. Galton, in announcing the programme of proceedings for the day, explained the circumstances connected with Dr. Livingstone’s discoveries previous to Mr. Stanley’s expedition.

Mr. Stanley then read his paper, in which the following are the two important items, omitting everything of merely personal interest:—

“If you will glance at the south-eastern shore of the Tanganyika, you will find it a blank; but I must now be permitted to fill it with rivers and streams and marshes and mountain ranges. I must powerfully tribes, the Waepia, Waikawendi, Waskononge, and Wanyamwezi, more to the south with ferocious Watula and predatory Warori, and to the north with Marra, M'living, Waengondo, and Walubwa. Before coming the Malagana, I had passed a great through southern Wavatua. Crossing the Malagar, and after a day’s march north, I entered Ubja, a broad plain country, extending from Uvima north to Uroja and the lands inhabited by the Northern Watusi. Three long marches through Ubja brought me to the beautiful construction Ubja, and after a steady tramp of twenty miles farther westward brought me to the divisional line between Ubja and Ujiji, the Liwale Valley, or Ruche, as Burton has it. Five miles farther westward brought us to the summit of a smooth hilly ridge, and the town of Ujiji, embowered in the palms lay at