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MODERN GEOGRAPHY

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MODERN GEOGRAPHY

CHAPTER I

THE BEGINNINGS OF MODERN GEOGRAPHY

In the year 1859 there occurred three events which, though not all comparable to one another, yet make the year one of such importance that we may take it as marking the beginning of the distinctively modern period of geographical science. These three events were, first, the deaths of Humboldt and Ritter, two great geographical pioneers who hewed tracks through the tangled jungle of unsystematised geographical facts, and second, the publication of the *Origin of Species*, by Charles Darwin, a book which supplied the compass which has made further road-making in that same jungle possible. In other words, as a result of the life-work of the two great geographers named, and of the throwing by Charles Darwin of

a new ferment into the mass of contemporary thought, what had been a mere collection of facts began to be a reasoned and ordered science. Both Humboldt and Ritter lived to a great age, so that at the time of their deaths not only was their work done, but there had been time also for their influence to permeate the literature of the subject.

Humboldt was, above all, a great traveller, but he was also a man of science in the largest sense, interested not in one group of facts, but in many. The extent of his knowledge and the breadth of his interests enabled him to observe a vast number of phenomena while his particular genius was manifest in the way in which he correlated these, and considered them in their relation to each other. Though it is true that his influence was most direct in the case of natural history, yet in this respect also he pointed to the future, for the geographers of to-day are indebted to the naturalists for some of their finest generalisations.

Ritter was a great teacher, the prototype of those who alike by their personal influence and by their books have enriched geographical science within the last fifty years. He had not Humboldt's breadth of knowledge

and interest, but in the stress which he laid upon the earth as above all interesting in that it is the field of the activity of man, he emphasised an aspect of the subject in which perhaps the most interesting modern developments have taken place.

Darwin had a twofold effect upon the progress of geography. In the first place, in his detailed work, *e. g.* in connection with coral reefs, and with the distribution of animals, and less directly in his investigation of the part played by earthworms in the formation of soil, he himself added to geographical knowledge. But he did much more than this. The doctrine of evolution which he made common property has had and is having an enormous effect upon geographical science, both directly and indirectly.

As is well known, in connection with his own theory of the cause of evolution, Darwin laid great stress upon the "Struggle for Existence." But he himself expressly stated that he used the term in a "large and metaphorical sense," a sense which in popular language it has tended to lose. From the geographer's standpoint, therefore, it is better to say that Darwin's work has added a new interest to the study of interrelations. Hum-

boldt, as we have indicated, was greatly interested in such subjects as the connection between the climate of a region and the vegetation, between the activities of man in a particular region and the physical conditions, and so on. But Darwin added a new interest to such studies. For example, it is a curious fact that desert plants have often spiny leaves, long roots, and so forth, and it is interesting to note how these peculiarities fit the plants for life in an arid climate. But when Darwin showed that there was evidence that the physical conditions of the desert gave rise to certain types of vegetation, it became worth while to study both the physical conditions and the characters of the plants in much greater detail than before.

If we simply lay it down as an axiom that, *e. g.* cactuses live in deserts, the fact has only a moderate interest, but when we find that almost any natural group of plants, if exposed through long ages to gradually increasing conditions of drought, will produce "cactus" types, then the whole subject acquires new importance. This illustration may serve to suggest what Darwin has done for geography.

He showed that there is a delicately adjusted balance between organisms and their surroundings, taken in their widest sense. But geology proves that through the ages there have been constant, if slight, changes in the physical conditions, and the effort of the organisms to readjust the balance thus disturbed has led to evolution. Thus to some extent at least the characters of organisms can be explained by the nature of their surroundings. A further interest is added by the fact that in this respect human societies and settlements can be shown to behave like organisms. Therefore we can hope to explain at least partially the manifold differences in man and his societies in different parts of the globe by the minor differences in physical conditions. In other words, the doctrine of evolution has added a unifying and co-ordinating principle which has not only prevented geography from being crushed by the enormous recent increase in known facts, but has also for the first time raised it to the level of a science.

This addition of a co-ordinating principle may be said to be the direct effect of the publication of the *Origin of Species*, but there has been an indirect effect almost as

important. The principles enunciated in that book had a stimulating effect, not upon one science only but upon every department of thought. Phenomena of no importance suddenly became interesting, and the result of this interest was an enormous addition to known facts. Not only has research been stimulated in every direction, but as this research has been largely directed by the desire to discover the interrelation of phenomena, we find that many of the old barriers between the sciences are breaking down.

The botanists are no longer content to study the facts of plant distribution; they now want to be able to give reasons for particular distributions. Therefore they must seek the aid of the meteorologists to explain differences of climate; of the physical geographer to make clear the effects of relief, of differences of soil, and of drainage; of the cartographer to represent the facts which emerge from their surveys, and so on. The physician must now seek the assistance of the zoologist before he can deal adequately with tropical disease, and the zoologist must have the help of the physical geographer before he can give adequate aid. The result is that in all directions geography is being enriched

by facts brought from the collateral sciences, while at the same time its position as a central unifying science is becoming more and more established; as a science which can deal with all these varied facts, but deal with them from a standpoint peculiarly its own.

At the present time, geography may be compared to one of Rodin's statues in which we see a beautiful figure as it were struggling to escape from the marble in which it is imprisoned. So the geography of to-day is in the act of escaping from the matrix of mere facts in which it has been too long imprisoned. It is now displaying itself as a great unity in the making of which all the sciences have played their part.

But even in this general survey of recent developments two other sets of facts must be touched upon. We have given fifty years as the period within which most of what is distinctively modern in geography has developed. It must not be forgotten that within the same period there has been a remarkable renewal of interest in geographical exploration. Roughly speaking, within this period Africa has ceased to be an unknown continent; the innermost recesses of

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