

origins and relations there prevails uncertainty. "The Romance of Plant Hunting" is a delightful composite of impressions based on no less than six journeys in these remote provinces of southwestern China.

Professor Gregory and his son in 1922 visited the same general region as Captain Ward. Their primary purpose was to make a comparison of "the physical history of parts of East Africa" (which has already formed the object of well-known researches by Professor Gregory) "with that of southeastern Asia." Their observations, of great importance in relation to the physiography of the entire realm surrounding the Indian Ocean, are briefly indicated in "To the Alps of Chinese Tibet" and set forth at greater length in the *Philosophical Transactions of the Royal Society of London*, Series B, Vol. 213, 1925, pp. 171-298. (See also: *Geogr. Journ.*, Vol. 61, 1923, pp. 153-179).

They believe that the so-called Indo-Malayan mountains, running to the south from Eastern Tibet and far older than the Himalayas, were disturbed by earth movements due to pressure from the north and west during the upheaval of the Himalaya. Associated with the east-west folding of the Himalayan system there was a buckling and fracturing of the earth's surface in a north-south direction. The fractures thus produced are characteristic of Yünnan and appear to have been "contemporary, at least in part, with those that made the Rift Valley system of East Africa, the valley of Mesopotamia with the Persian Gulf, the rugged western front of the peninsula of India . . . and the western edge of the plateau of Australia. . . . Their trend and distribution suggest that they were due to the rending of Africa and south-eastern Asia, when the foundering of the once intervening lands made the basin of the Indian Ocean." Certain of these fractures apparently marked out the lines followed by the Tsangpo-Brahmaputra, the Salween, the Mekong, and the Yangtze Rivers across the grain of the Himalayan structure.

But the Gregorys did not devote themselves exclusively to geology. They lost no opportunity of observing the people. They divide the population of western Yünnan into four main groups, all essentially Mongolian in origin: aborigines, Tibeto-Burmans, Shans, and Chinese. Of all these stocks, they hold that the Chinese is the most vital. "The continuous expansion of Chinese culture and influence is probably the most important and enduring movement now taking place in south-eastern Asia." Their opinion of the Chinese character differs widely from that of Captain Ward, who writes: "Who shall say that China has not within her the germs of that fatal disease which, time and again, burst asunder the Shan Empire as fast as it was reconstructed elsewhere? I mean the deadly germ of disintegration, of mutual repulsion of parts" (*The Romance of Plant Hunting*, p. 86). The two statements quoted are in themselves not altogether irreconcilable; on the other hand Captain Ward's attitude toward the Chinese as frequently expressed in both of his books would seem to be contradicted by the favorable impression received by the Gregorys.

THE GEOGRAPHY OF NORTH AMERICA

L. RODWELL JONES AND P. W. BRYAN. **North America: An Historical, Economic, and Regional Geography.** xiii and 537 pp.; maps, diagrs., index. Methuen & Co., Ltd., London, 1924. 21 s. 9 x 5½ inches.

The title of this book is sufficient evidence of its British origin, and it is a notable fact that the first competent work published in the English language on American geography is not of American authorship, Professor J. Russell Smith's "North America" (reviewed in the April number of the *Geogr. Rev.*) having been preceded several months by the work now under consideration. The next thing that strikes

the reader's attention is that the first quarter of the book is given to historical geography, which is a new departure in a general treatise. So-called historical geography often consists of unadulterated history, prefaced or followed by a polite but distant and formal bow to geography. So a second agreeable surprise awaits the reader, who finds that the historical chapters are as truly geographical as those which follow. Thorough use is made of the sources, and the author is not content with generalizations and averages, but does justice to exceptions and extremes. These nine chapters of the senior author on the discovery and early settlement of the continent, the Spanish advance, early French settlement, British tide-water settlements, the Appalachians and the French and British struggle, settlement in Kentucky, the War of Independence and War of 1812, trans-Appalachian routes, and the Civil War, are worthy of separate issue as an example of scientific exposition and literary charm, in which the intimate relations of geographic factors and historical events are clearly set forth.

Scientific topics are never avoided or glossed over but are introduced just where they are needed. The nettles of technical meteorology, oceanography, geology, and physiography are firmly grasped. The pressure and wind charts of the North Atlantic, tides, currents, ice drift, and fogs; the high plateaus and rugged mountains of Mexico; the desert areas and prevailing northerly winds of the Pacific coast; the geological structure of the Laurentian shield, St. Lawrence valley, and Ontario plain; the continental ice sheets; the evolution of the Great Lakes; the history of the Niagara River and the Mohawk-Hudson outlet; the interlocking of Laurentian and Mississippi drainage; the coastal plain and drowned valleys between Florida and Nova Scotia; the structure and relief of the Appalachian barrier and the trans-Appalachian gaps combine the lure of great adventure with rational explanation of the obstacles encountered and the conditions which delayed but made possible ultimate success. Both physiography and history are mutually enlivened and illuminated. There is reason to hope that such exposition may lead to a more cordial recognition on the part of historians of the extent to which human achievement is subject to geographic control.

It is to be regretted that the author has given little attention to the most romantic and interesting movements of people in America, the settlement of the Northwest Territory, the occupation of the Louisiana Purchase, the conquest of the Great Plains, the exploration of the Rocky Mountains and Plateau regions, and the final annexation of the Oregon country and the Spanish Southwest. A book like Paxson's "History of the American Frontier" would disclose events west of the Appalachians as worthy of the pen of the historical geographer as any on the Atlantic seaboard.

In Part II the junior author treats economic geography on the same vigorous and fruitful plan. It opens with an uncompromising chapter on the climates of the United States and proceeds to discuss in 50 pages of unrestrained detail the geographical factors that determine the production, distribution, and marketing of three great staples, cotton, wheat, and maize. Then follow 100 pages on coal, iron, and oil, in which the author pursues with tireless persistence the geological and geographical processes and conditions in any way concerned with the occurrence and utilization of these foundation stones of present day civilization. In 15 pages the structure and relief of the Pittsburgh district are set forth in such detail as to explain (1) the distribution of coal seams, (2) the distribution of coal mined, (3) the origin of the coal, (4) the geological changes that have removed a part and left the rest easily accessible, (5) the history and present régime of the stream systems that give to Pittsburgh its dominant nodality, (6) the extent to which stream valleys favor down-grade transportation, (7) the cutting of the main valleys down to a level slightly above or below that of the coal seams, by which 50 per cent of the coal can be won by drift or up slope, 20 per cent by down slope, and 20 per cent by short shafts, (8) the thickness and uniformity of the coal seams over large areas, favoring the

use of machinery, the short time lost by the miners in reaching their work, and the resulting large output per man and low cost at pit mouth, (9) the terraces of the deep and steep-sided valleys which furnish easy routes for railroads and sites for mining towns. These and other less important physiographic factors are marshaled to form a graphic picture of what seems to be an almost ideal contrivance of nature to supply Americans with cheap coal. With a change of purpose and phrasing, this passage might be converted into a supplementary chapter of Paley's "Natural Theology" or expanded into a "Bridgewater Treatise."

On a similar but smaller canvas are drawn the contrasted features of the anthracite field. Nothing serves like physiographic explanation to make economic statistics palatable, and geography proves more interesting and satisfactory than physiography or economics. The chapters on iron and petroleum are hardly less striking examples of the Sherlock Holmes method, by which the author runs down every trail leading to a natural factor at the bottom of an economic fact.

There is nothing about cement, brick, and stone; and forests and timber receive inadequate notice.

Part III, Regional Geography, by the senior author, discusses twelve regions of North America. It is difficult to understand what criteria the author used in selecting and delimiting these regions and the factors that belong to regional geography. It seems to be a sort of catchall for what is left over from other phases of geography. New England, by nature, history, and tradition a sufficiently well marked region, is given eleven pages, one half more geological than is considered good form by American geographers and the other half mostly economic, the port of Boston occupying two pages.

The next chapter on the Central Lowlands opens with the statement, "Immediately south of the Great Lakes and continuing northwestward into Canada lay one of the very greatest expanses of open, *unforested*, generally fertile land on the surface of the globe." This seems to perpetuate the especially tough old error that Minnesota, Wisconsin, Michigan, Ohio, and Indiana were originally prairie states. Eight pages are given to a rather minute discussion of the glacial drift, six to the Ozark Highlands, and eight to the cities of the Central Lowlands. While the wheat and maize belts have been fully discussed in previous chapters, a Middle Western geographer cannot help feeling that here again, as in the historical part of the book, the author has failed to grasp the fundamental position of the region in American geography.

Mountains and plateaus seem to furnish to the geographer, as well as to the poet, more attractive and usable material than do lowlands. Our author finds it easy to write three times as much about the western half of the United States as about the Central Plains. The writing is generally as picturesque as the country. From such wealth of material he must pick what attracts him and leave the rest untouched. There is enough about irrigation, little about cattle and sheep herding, and nothing about the inhuman deserts and mountains. Probably the book will not be adopted for use in the schools of Los Angeles, to which just six lines are given.

Beginning some sixty pages after New England, the city of New York, the geology and topography of its site, environs, and hinterlands, the commercial corridors which it stretches out like octopus tentacles to draw upon Buffalo, Cleveland, Cincinnati, Chicago, Pittsburgh, Philadelphia, Baltimore, and Boston are graphically depicted, leading to the climax that New York is not only the dominant city of North America but holds a wider and more comprehensive supremacy than any other city in the world. This is well done.

The Appalachian regions and the Atlantic and Gulf Coastal Plains are not included under regional geography. A chapter on Florida illustrates the tendency of the author to confine geography to physiography and economics, seven pages being given to fruit and phosphates and three lines to winter resorts.

The chapters on Mexico, eastern Canada, the Prairie provinces, British Columbia and the Mackenzie basin, and Alaska are more adequate than those dealing with the United States, these regions being relatively unencumbered with geographic complexities.

A score or more of errors in place names are not too many to expect from authors who are writing about a foreign country, and to whom these names are not a part of their daily news reading. There are some slips not thus to be explained, such as mention of California as "the largest of the states," and the now obsolete "whale-back boats" on the Great Lakes. Fargo clay is called glacial, and Lake Agassiz is barely mentioned. No suspicion is indicated that southern New England is not a peneplain. Naturally local phrases are sometimes misunderstood, as "a pudding called hominy" and "boiled meal" for corn mush. The use of Sierra and Cordillera with a plural verb is not a grammatical construction. Some idioms peculiar to British English are none the less unjustifiable, as the superfluous "we have" and "we get" implying there are or there is, and the placing of *only* before the principal verb instead of before the clause or phrase it modifies. These are trifling blemishes easily removed in a second printing. On the whole the authors have been thorough in their search for authentic sources of information, and have fallen into surprisingly few errors. Their work is sound and competent, if incomplete, and in many directions without a rival in its field.

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THE DEFENSE OF THE BRITISH EMPIRE

D. H. COLE. **Elementary Imperial Military Geography: "General Characteristics of the Empire in Relation to Defence."** vii and 259 pp.; maps, bibliogr. Sifton Praed & Co., Ltd., London, 1924. 8½ x 5½ inches.

The broad scope of this interesting little volume, written by Captain Cole of the British Army Educational Corps, is best indicated by the subtitle: "General Characteristics of the Empire in Relation to Defence." The resources of each part of the Empire in man power and in materials and the lines of communication between its several parts, whether by land, sea, or air, are discussed as elements of the major problem of defending a far-flung empire in time of war. For the most part only strategical questions of a larger sort are considered, and even these are treated in an elementary manner; but the reader will lay down the book with a better appreciation of the strategical background of many political questions which have figured largely in the public press in recent years. Incidentally the American reader will get a new point of view on certain matters affecting the military security of his own country.

In casting up the credits and debits in the ledger of imperial resources, the author justly points out that account must be taken not only of such obvious war materials as iron, nickel, coal, and petroleum, but of all commodities whose lack might bring about the collapse of national resistance. Among such commodities are listed wheat, wool, cotton, and timber, of which the United Kingdom must be able to import from 75 per cent to 100 per cent of the total it consumes if the heart of the Empire is to continue functioning. That the little island kingdom is truly the heart of the great imperial organism in a military even more than in a political sense, will be evident from the following three facts: it is the main technical base, containing the principal reserves of coal and being the chief producer of iron and steel for the Empire; it is the chief owner of shipping, possessing 19,300,000 tons out of a total tonnage for the Empire of 22,000,000 tons; it possesses the main reserve of white man power, 48,000,000 out of a total white population of 66,000,000. It is not surprising, then, that the author should in this part of the work stress chiefly the problem of defending the British Isles.