

with the table of nuclear data and figures summarizing them, which are referred to in the text. It is to be hoped that the remaining volumes will soon become available, so that the student who wishes to read the original papers may know where to find them, and be able to consult what must be a very useful compilation of data.

The present volume, after an introductory survey of the whole field (Part 1), is confined to detailed consideration of two-nucleon systems, on the hypothesis that only central forces are effective. The first chapter of Part 1 deals with the elementary particles of physics and their properties. How difficult a task it is to write a book about a rapidly developing subject is demonstrated by the absence of any reference to the recent discovery by the Bristol physicists that there are at least two kinds of mesons in the cosmic rays, and that the mesons which occur at sea-level are not those which play a part in the nuclear forces. This discovery, though scarcely a year old, has called for revision of our ideas on the subject, which could not be included in this volume. The remainder of Part 1 is devoted to considerations of the simpler properties of nuclei, such as their binding energies, radii, etc., and the arguments pointing to the saturation property of nuclear forces.

In Part 2, one chapter is devoted to general considerations on the wave equations of the two-nucleon system, two chapters to detailed considerations of the proton-neutron system (that is, the deuteron and the scattering of neutrons by protons), one chapter to the proton-proton system and a final chapter to a comparison of the forces between like and unlike nucleons. These topics are treated with an encyclopædic thoroughness which will certainly make the book a standard work of reference for many years to come.

The book, though written in English, is printed in Holland. The printing is attractive and pleasantly free from misprints; but the formulæ are disfigured by symbols in strange types and a luxuriant growth of prefixes, affixes and suffixes. These latter also disfigure the text by having made it impossible for the printer to keep an even spacing between the lines; they could well have been omitted without loss of clarity.

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A SOUTH AMERICAN ANTHROPOLOGICAL SYMPOSIUM

Handbook of South American Indians

Edited by Julian H. Steward. (Smithsonian Institution: Bureau of American Ethnology, Bulletin 143.) Vol. 3: The Tropical Forest Tribes. Pp. xxvi+986+126 plates. Vol. 4: The Circum-Caribbean Tribes. Pp. xx+609+98 plates. (Washington, D.C.: Government Printing Office, 1948.) n.p.

THE first two volumes of this work, dealing with the marginal tribes and the Andean civilizations, were introduced in *Nature*, Nov. 30, 1946, p. 769. Those now under review cover vast areas in eastern and northern South America, besides the West Indies and most of Central America south of Mexico. These regions were more sparsely covered by published information even than those dealt with in the first two volumes, so their preparation has involved a great deal of research, one result of which was to show that the arrangement of sub-areas planned for

vol. 3 was largely artificial, though it was too late to alter it, and that much of the information on Colombia in vol. 2 might more properly have been included in vol. 4. The editor points out that the fragmentary nature of the information about many of the tribes treated in vol. 3 has resulted in prolixity rather than in brevity, since it has forced authors to let original accounts speak for themselves, retaining much detail which may be unimportant, and has prevented them from making reliable summaries of the basic features. This is not to say that these volumes are less valuable than their predecessors or any less necessary to students of South American archaeology and ethnology; in fact, they represent, if anything, a greater advance on our previous knowledge about the areas they deal with.

In vol. 3 the emphasis is, naturally, on the modern Indians rather than on the archaeology, about which there is little to say, although parts of eastern Bolivia and the Napo region of Ecuador, about which at least a little is known, seem to have escaped mention both here and in vol. 2. The Indians described are mainly in their original state, unlike those in the Andes in that they are little affected by culture contact. As a matter of convenience, the tribes of northern Colombia and of Venezuela north of the Orinoco are dealt with in vol. 4.

A general principle of great interest and importance, which is indicated by the survey of this area, is that the tropical forest type of culture spread upstream from a centre in the lower Amazon and the Guianas as far as its limit at the edge of the Andean zone, and it is considered that there was little cultural diffusion overland either from the Orinoco basin or the Andes. It is further suggested that the tropical forest culture came originally from the circum-Caribbean area, and the argument is carried further in vol. 4, where the idea of a circum-Caribbean culture, whence the forest culture is derived by degeneration, is developed. It is shown that, at the time of the conquest by the Spaniards, a number of tribes in that area had an elaborate culture, now vanished, which probably resembled that of the Formative Period in Mexico and the Andes, with a strong bias towards the latter. This implies that cultural flow in Central America was mainly from the south. Opportunity is taken to point out the weakness of the theories of origin of American civilizations which ascribe them to the areas least known at the time of enunciation, and to show how inherently improbable is the idea that the essentials of the higher civilizations could have come from the forests.

In contrast to vol. 3, there is a good deal to say in vol. 4 about archaeology, and there are extremely useful summaries dealing with the Central American countries, Venezuela and the West Indies, by acknowledged experts such as Strong, Lothrop, Alfred Kidder II and Rouse. There is a large amount of information about the modern tribes, in spite of the fact that many of them are relatively degenerate survivals, as has already been implied. The area dealt with includes northern Colombia, but it is rather unexpected to find the Cayapa and Colorado of western Ecuador in this volume.

The extent of our debt to the Bureau of American Ethnology for this vast undertaking gradually becomes apparent as publication advances. In order that we may get the best out of it, an index is urgently needed, and it is to be hoped that one is planned for the final volume.

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