be more precise, it is worth buying for the sake of some of the notes contained in the appendixes and for some of the information summarized in the chapters dealing with the making of smears and squashes, with the handling of special tissues such as pollen tubes, embryo sacs and salivary glands, and with the application of special agents such as X-rays, drugs and the various treatments for spiral structure.

I. Manton.

## PRECOLOMBIAN HAITI

Excavations in the Ft. Liberté Region, Haiti By Froelich G. Rainey

Culture of the Ft. Liberté Region, Haiti

By Irving Rouse

(Yale University Publications in Anthropology, Nos. 23 and 24.) Pp. 48+196+35 plates. (New Haven, Conn.: Yale University Press; London: Oxford University Press, 1941.) 21s. 6d. net.

THESE two papers, issued as a single volume, give an account of the culture of a small area in the north-east corner of the Republic of Haiti, and of the excavations on which it is based. With one exception, the sites lie within an area measuring about 7 km. by 5 km., and the remaining site is about 10 km. farther east.

The first paper is an admirably concise account of the excavations by Dr. F. G. Rainey. Eleven sites were investigated, all of them shell middens. Five of these yielded a culture characterized by flint implements without pottery, burials or defined hearths; the remainder, which were somewhat larger and thicker, though the maximum thickness of deposit was only about 1.5 metres, contained pottery. Of these, four were assigned on the basis of their pottery type to one culture, called the Meillac, and the other two to another, with a different type of pottery, called the Carrier. A few primary burials were found in the middens on Meillac sites: they were in poor condition, but appear to have been in a flexed position, and in two cases were accompanied by pots. No other grave goods were found. There was also evidence of secondary burial. There was no stratification which threw light on the relative ages of the cultures on any of the sites, but a small admixture of Carrier pottery was found on three of the Meillac sites.

The paper is illustrated by two maps, both of which have been reduced too much, a criticism which applies particularly to that of the Ft. Liberté Region, which also lacks a scale. The remaining figures are plans and sections of the sites. These are perfectly clear, but the vertical scale has been exaggerated as much as ten times in several cases and forty in one. Where possible, it is better to draw sections true to scale: the amounts of exaggeration cited are in any event excessive.

The second, much longer, paper, by Dr. I. Rouse, is an account of the cultures. He classifies them into four periods. The first, comprising Rainey's flint sites, is occupied by the Couri Culture. Period 2 is a blank separating the Couri from the Meillac Culture, and no evidence for its existence is presented. Presumably it is based on the absence of any admixture of Meillac objects on Couri sites, but this is not an indication of any value when the small size of the area studied is considered. Period 3, with its four sites of the Meillac Culture, is divided into four subdivisions. The evidence for this appears to have been

presented in a previous paper by the same author, but the value of these minor periods is on the face of it extremely dubious. Period 4 comprises the two sites of the Carrier Culture.

There is no reason to doubt that the Couri Culture is the earliest, but the question of the relative ages of the other two is more difficult and may not yet be finally settled. The author says that he demonstrated the greater age of the Meillac Group in his previous paper "by distributional and statistical methods", but their merits cannot be judged since the paper is not available. He believes that the Carrier type of pottery originated in the Dominican Republic when the Meillac type existed in the Ft. Liberté region, and that the Carrier type, which is the more sophisticated, replaced the other by diffusion. It seems likely that this explanation is correct.

Dr. Rouse's account of these cultures could scarcely be fuller, but it is difficult to read and excessively long owing to his method of presentation. He is trying to introduce a definite procedure for classifying culture and in doing so he uses a lot of terms which are not likely to command wide acceptance. In his desire to apply his system throughout the work he involves himself in much unnecessary repetition and many glimpses of the obvious. The term 'mode' lends itself particularly to this sort of thing. Absurd 'modes' are legion, but one list must suffice as an example. After a detailed description of the petaloid stone celts (in the course of which we are told that they are relatively heavy, rigid and hard!), we find the following conclusions on p. 95: "The following are the modes for petaloid stone celts: igneous rock, metamorphic rock, dullness of the rock, bright greenness of the rock, flaking (?), battering (?), grinding, polishing, resharpening, high surface polish, petaloid shape, pointed butt, convex sides, convex edges, semicircular bit, large size, small size, use for chopping, and ceremonial use. . . ." The conceptions of "alternative" and "optional" modes do not seem to clarify the descriptions, and it is difficult to see what purpose is served by the numerous tables giving "alternative and optional relationships of the modes", etc., particularly when they contain column headings like the following: "No overall shape", "No body", "No aperture", in a table dealing with open bowls. They appear to represent an abortive attempt to reduce classification to a mathematical basis, and they would have been better omitted.

Appendix I consists of a detailed report by specialists on a technological analysis of Meillac and Carrier sherds, in the course of which they state definitely that there is no evidence of artificial tempering. In spite of this, the author discusses the whole question afresh on p. 55 and suggests the same conclusion as "mere conjecture".

The plates consist of excellent photographs of the objects, of which there are plenty of examples. There are, however, several numerical mistakes in the references to them in the text.

The final chapter is an attempt to relate the cultures to others in the West Indies. It contains thirteen pages, of which more than seven are occupied by tables, most of which do not add any useful information to the work. The result of it all is to show that the Meillac and Carrier Cultures have been proved to exist elsewhere in Haiti, but that it is premature to try to correlate them with anything farther afield, a fact which is clearly demonstrated by the high proportion of space occupied by queries in the final table.

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