

CONTRIBUTIONS TO THE ETHNOLOGY AND ARCHÆOLOGY OF NORTH AMERICA.<sup>1</sup>

SO little information is available concerning the Indian tribes of the Lower Mississippi Valley and the adjacent coast of the Gulf of Mexico that Mr. Swanton's memoir is very welcome. In it he has published extracts from early French authors, and in a compact form we have all that is known about tribes now extinct or reduced to a few, much modified, survivors. There are seven linguistic families around the Lower Mississippi; of these, the Caddoan and Siouan are extensions or outliers of a wider distribution; the Muskogean group extends in a broad band to the Atlantic; to this is related the small Natchez group. The Chitimachan people live at the mouth of the river, while westwards extend the cognate Atakapan

is described. There was great licence before marriage. There was a peculiar, strongly centralised form of government; the great chief is called Great Sun; his heir is the son of the woman nearest related to him; his relations were little suns; nobility was reckoned through the females, but by the seventh generation nobles gradually sunk to the rank of stinkards or commoners. Princesses of the blood

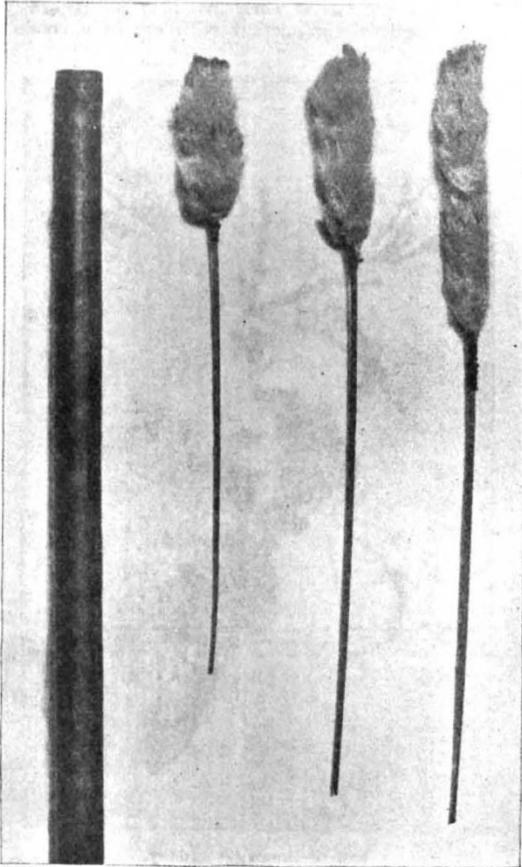


FIG. 1.—Blowpipe and cane arrows. The end of the blowgun has been ornamented by burning and the arrows feathered with down from the fireweed.

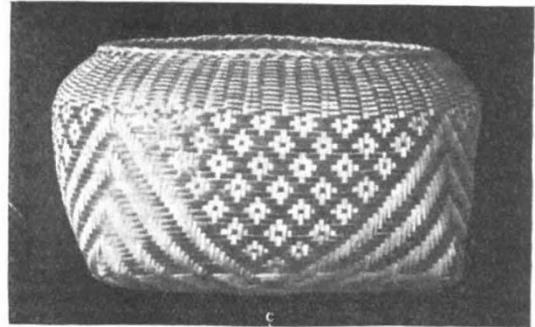
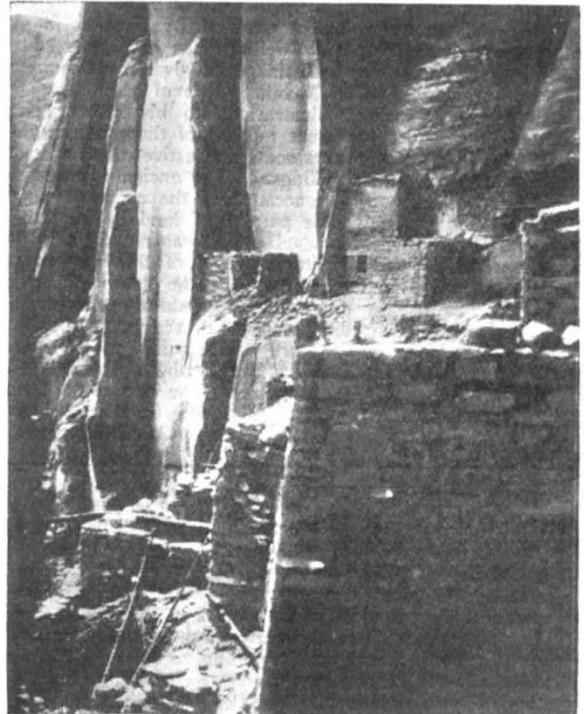


FIG. 2.—Chitimacha basketry. This design of large white spots with dark centre is called *teéxt-hani*, "blackbird's eye."

always espoused men of obscure family, and had but one husband, who might be dismissed at will. The community consisted of (i) nobility of three ranks: (1) suns (children of sun mothers and stinkard fathers); (2) nobles (children of noble mothers and stinkard fathers, or of sun fathers and stinkard mothers); (3) honoured people (children of honoured women and stinkard fathers, or of noble fathers and stinkard mothers); and (ii) stinkards (children of stinkard mothers and honoured men, or of stinkard fathers



and mothers). The Great Sun was practically treated with divine honour.

The harvest feast was the most solemn of all; essentially it consisted in eating in common, and in a religious manner, new corn which had been sown for that purpose by warriors, with the great war chief at their head; the Great Sun presided at the feast. The war customs are described: "The great war chief pays to the family for

group, to which, probably, the small Tunican group are also allied.

By far the greatest space is given to the Natchez group, the authorities on which are quoted at length, a plan which has much to recommend it, though it leads to a certain amount of repetition, and the conflicting accounts cannot always be reconciled. Head-flattening occurred, and both sexes were freely tattooed, but the men only after having killed some enemy. The principal animals hunted were the bear, deer, and bison; agriculture had attained great importance; the cultivation of maize was done in common, pumpkins, water melons, tobacco, and probably beans were also grown. The work and play of the sexes

<sup>1</sup> Smithsonian Institution. Bureau of American Ethnology. Bulletin No. 43: "Indian Tribes of the Lower Mississippi Valley and Adjacent Coast of the Gulf of Mexico." By J. R. Swanton. Pp. vii+387+32 plates. Bulletin No. 50: "Preliminary Report on a Visit to the Navaho National Monument, Arizona." By J. W. Fewkes. Pp. iv+35+22 plates. (Washington: Government Printing Office, 1911.)

those whom he does not bring back, a circumstance which renders the chiefs more careful in leading their warriors." Smoking the calumet is associated with preparation for war and with peace treaties. The Natchez language appears to be the result of a mixture between a Muskogean and a non-Muskogean people.

The Chitimacha were less warlike and more cowardly than the tribes higher up the Mississippi; their culture differed from the latter principally by the increased importance of food from the waters and the decreased importance of food from land animals; but wild vegetable food was their mainstay, though they cultivated maize and sweet potatoes. Fish were caught mainly with hook and line, but nets and traps were used. The blowpipe was employed, the darts of which were made of slender pieces of cane feathered with thistle-down (Fig. 1). Pottery was made; but the chief glory of the Chitimacha was, and still is, their basketry (Fig. 2). Like some other tribes of the district, there were nobles and commoners, with different terms of etiquette for each; but, unlike the Natchez, their nobles were constrained to take partners from their own ranks, thus forming a caste. Matrilineal totemic clans existed. Every village of any size had a bone-house, in which a fire was kept continually burning. The bones of people were dug up by "turkey-buzzard men" and kept in the house for some time, and finally buried in a mound. Every large village had also a dance-house for religious and social ceremonies, as, for example, the initiation of boys. Different from this was the solitary fast and confinement which each boy (and, it is said, each girl also) underwent in order to obtain a guardian spirit. The so-called "temples" of the Natchez and other Lower Mississippi tribes were only variants of the bone-houses of the Chitimacha and Choctaw. Further study may be expected to throw light upon the evident fusion of at least two stocks in the tribes recorded by Mr. Swanton. A number of old illustrations are reproduced, but many of the photographs are not very satisfactory; there is a useful map.

The excellent archaeological work of Dr. Fewkes in exploring and conserving cliff-dwellings has been referred to already in NATURE. In Bulletin 50 he gives an account of his stewardship of the Navaho national monument in Arizona. The excellent illustrations to his report bring home to the reader the great interest of these remarkable remains (Fig. 3). He makes some suggestive remarks upon the significance of the dwellings. "The ancients chose this region for their homes on account of the constant water supply in the creek and the patches of land in the valley that could be cultivated. . . . Defence was not the primary motive that led the sedentary people of this canyon to utilise the caverns for shelter. . . . the cause of their desertion was not so much due to predatory enemies as failure of crops or the disappearance of the water supply." Dr. Fewkes does not regard these ruins as of great antiquity; such evidence as has been gathered supports the Hopi legends that the inhabitants were ancient Hopi belonging to the Flute, Horn, and Snake families.

A. C. HADDON.

#### BACTERIAL DISEASES OF PLANTS.

THE second volume of Dr. E. F. Smith's work upon bacteria in relation to plant diseases, published by the Carnegie Institution of Washington, comes very opportunely to this country at a time when there are signs of an awakening interest in the subject of bacterial diseases of plants, and botanists, especially those interested in agriculture or horticulture, are beginning to turn their attention to the many economic problems in connection with this branch of phytopathology. The first volume, published in 1905, the author states, "had for its aim only the clearing of the ground by a discussion of methods of work in the general subject of bacteriology."

Although this department of botanical study is only some thirty years old, a considerable literature has arisen, even when the subject is taken in its narrowest sense, but when it includes, as in this case, many correlated topics, the list assumes large dimensions. Everyone interested in plant pathology will be grateful to Dr. Smith for bringing these papers together and for giving us a book of reference which

NO. 2207, VOL. 88]

has been long needed, and which embraces a concise historical account, leading up to the present position of the subject and embodying the most recent developments in this branch of research. A special feature of the book is the author's plan of including abstracts of many of the papers quoted, often of very considerable length, so that direct appeal can thus be made to original investigations; and although this method demands much space, the advantages are great, especially where controversial matter is being considered. Thus, under each sectional head, the author introduces extensive extracts from those original papers which he regards as critical studies, and concludes with a synopsis of the latest contribution to the particular phase of the question dealt with, adding always an extremely valuable bibliographical record. In the historical review Dr. Smith has missed the fact that the existence of a toxin and cytolytic enzyme secreted by the attacking bacterium was proved as early as 1899 as regards the "soft-rots," and in conjunction with carefully conducted

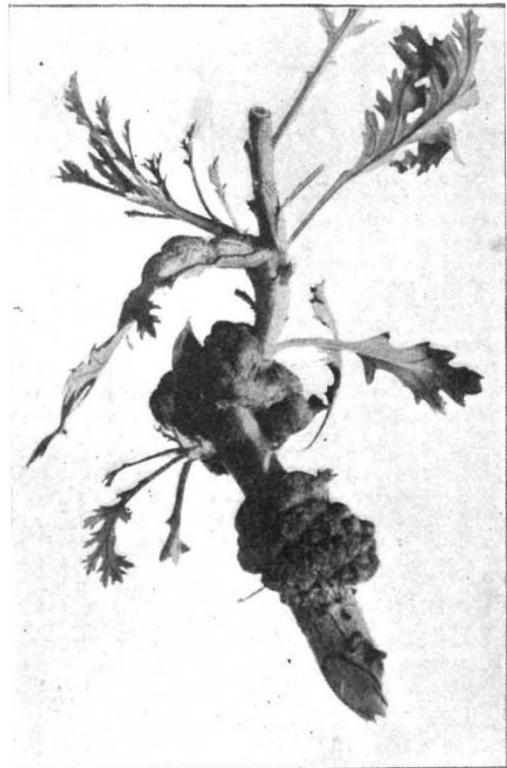


FIG. 1.—Crown gall on daisy.

Two tumours on the stem of a Paris daisy as the result of an inoculation of *Bact. tumefaciens* by needle-pricks, and on a branch above the upper one a secondary tumour on the petiole of a leaf. Age of primary tumours about three months; that on the leaf is much younger, perhaps four weeks old.

inoculation experiments; thus the bacterial nature of this class of diseases was fully established at that date.

The present treatise covers a wide field, and questions relative to the action of bacteria upon various tissues, the reactions of the plant, the interrelations of animal and plant parasites, individual and varietal resistance, and problems relating to prevention, come naturally within the scope of the work. A discussion of the various theories regarding the root-nodules of the Leguminosæ, and the question of symbiosis as it touches parasitism, are also usefully introduced, and the large chapter devoted to this relationship presents a valuable summary of results. But a *résumé* of conflicting views concerning bacterial symbiosis in insectivorous plants can scarcely be included under the titular definition of the book, nor the bacterial symbiosis in Cryptogams, as, for example, in kephir and the ginger-