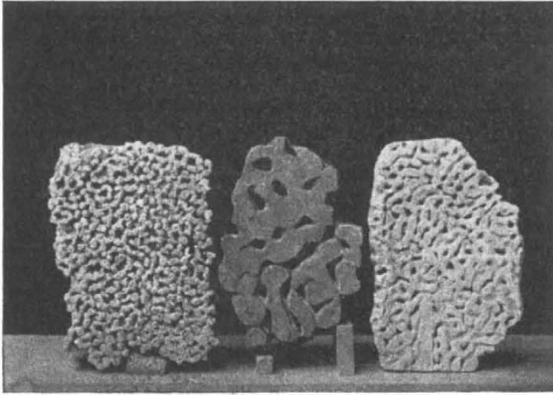


consisting of either lime, silica, iron, or other elements. Any such information from your readers would be valued.

The Magnesian Limestone of Sunderland has perhaps the largest number of these calcareous growths, of which this illustration shows three specimens. The first and third show clearly the change from rods to



Tubular structures in magnesium limestone. $\times \frac{1}{3}$.

tubes, the last being the most advanced and typical as to size. That in the centre is extra large, but the process is incomplete.

Other illustrations of the structures in the Fulwell Hill beds can be seen in NATURE of January 29 and December 31, 1914.

GEORGE ABBOTT.

2 Rusthall Park, Tunbridge Wells, February 3.

WILD AMAZONIA.

THE author, whilst fretting on the Active List owing to ill-health contracted in the interior of East Africa, happened to read Wallace's classical "Travels on the Amazon," with the result that he left England in the month of April, 1908, reaching Manaus by the end of May. His serious work began in the middle of August at Encanto, the place of "enchantment," now by irony of fate of Putumayo fame. Thence he disappeared for some months in the wilderness, roaming over some 40,000 square miles of that no man's land claimed by Brazil, Ecuador, and Peru. His company was composed as follows:—Above all, John Brown, a Barbados negro, as personal servant, who proved himself a very good choice; eight Indian carriers who were changed often, mostly because they ran away; two half-castes, rubber-collectors who attached themselves to the party for some time; and eight Rationales or semi-civilised Indians, with three women, and armed with Winchesters. It is customary, in most Latin-American countries, to distinguish as "reasonables" those Indians who have been broken in to the white man's ways; other tribes are *bravos*, *reduzidos*, and *manzos*, i.e., still wild, broken, or tame.

The danger of these travels arises from the wild natives, who, not understanding the object of a white man's presence, think it best to kill him,

¹ "The North-West Amazons. Notes of Some Months Spent among Cannibal Tribes." By Capt. T. Whiffen. Pp. xvii+319. (London: Constable and Co., Ltd., 1915) Price 12s. 6d. net.

provided there is a chance of doing so without danger to themselves. An attempt to clear up the fate of the French explorer Robuchon, lost in 1906, was unsuccessful. When possible, travelling was done by launch; that down and up the Japura river by canoe; but by far the greater part of the journeys was across country, and therefore the most difficult in every respect.



FIG. 1.—Andoke bamboo case with darts for blowpipe and gourd full of cotton. From "The North-West Amazons."

The seven months' travelling make an extremely complicated course.

Experienced traveller as he was, Captain Whiffen, in order to get an insight into the Indians' mode of life, sank all notions of superiority, manners, and customs, and practically lived their kind of life. Information could be obtained only by closest observation. The language is always the difficulty, and yet slurred over

by so many travellers' accounts, which give the impression as if they were the most accomplished of linguists. Our author, however, tells us upon what slender links his verbal information sometimes depended; English John, the negro, knew Witoto well, and one of the Witotos of the party knew a little Andotu, a tribe from which original information was wanted. In such a roundabout, laborious way some of the vocabularies and phrases published in the book had to be compiled.

Our traveller does not give a glowing account of the dreary monotony, discomfort, and ever-present danger in the bush, "the weary stretches of inundated country and sweating swamp, where you pass with an unexpected plunge from ankle-deep mire to unbottomed main stream. The eternal sludge without a stone or honest yard of solid ground makes one long for the lesser strain of more definite dangers or of more obtrusive horrors. The horror of Amazonian travel is the horror of the unseen. It is not the pursuit of unfriendly natives that wears one down; it is the absence of all sign of human life. Only the silent message of a poisoned arrow or a leaf-roofed pit-fall tells of their existence somewhere in the tangled undergrowth." "Game being always hard to shoot in the bush, and fish, if

plentiful, hard to catch, the real fear of starvation, after, perhaps, the ghastly dread of being lost, is the greatest cause of anxiety." The necessity of having to carry rifles and food (half of the tinned provisions turned out to be bad) forced him to travel without a tent!

The present book is not a story of travel, scenery, and adventure; in fact, not an account of what the author did, but a series of reports of observations concerning the natives in every respect—their physical conditions, mode of life, beliefs, folklore, languages, music, implements, customs; and most of the respective chapters are written and self-criticised from the wider point of comparison with other peoples of other lands, and

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thus this many-sided work will prove of great value to the student of anthropology. Only a few instances can here be mentioned. The Japura tribe carefully retain the teeth of the slain, to be made into necklaces as a visible and abiding token of accomplished revenge. This removal of the teeth may be held synonymous with the curse of many savage tribes in reference to their enemies, "Let their teeth be broken"; cf. also King David, and possibly the reason is a reversion in thought to the time when teeth were man's only weapon.

A large number of spider-monkeys were observed, with tails so prehensile that they served as additional hands to convey fruit to their mouths. Some tribes consider it beast-like, unclean, to eat birds' eggs, although they eat those

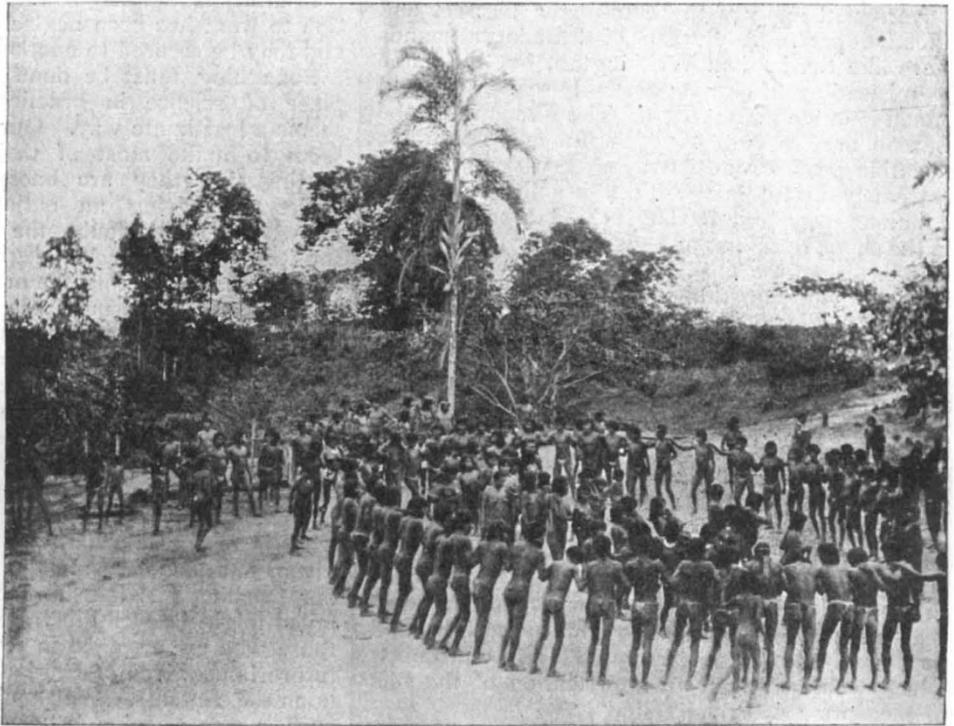


FIG. 2.—Okaina Dance. From "The North-West Amazons."

of turtles and the combing of their own head-fauna. There is a tribal hot-pot over the chief's fire in the big communal house to which all the unmarried men must contribute, besides the individual family hot-pots. The newborn child is washed and ducked in the river; if it is not strong enough for this drastic treatment, it had better die; large families not being wanted, there is a vigorous weeding-out, after birth, females first.

Besides a large map, and a small one for the chapter on languages and dialects of these very locally and sparsely populated wildernesses, the book is embellished with many, mostly excellent, photographs, which are a record of industry and patience where films proved useless on account of

the moist climate. The groups of natives were always taken as they lived, according to climatic and psychological essentials, the women naked and often painted, the men unembarrassed by more than a loincloth.

THE AMERICAN STATE AND HOUSEHOLD SCIENCE.

THE application of science to national life and industry in the United States proceeds apace, and affords a very interesting spectacle in its variety of methods and experiments. Undoubtedly great progress is being made amidst a great deal of talk, and America bids fair to rectify itself in relation to science much more quickly than we can do even under the stupendous impact of war and all that it threatens to us. In this process of rectification the United States Government appears to be taking a discreet and effective part. A Bureau of Standards sounds more like Berlin than Washington, but the name is misleading if it suggests bureaucracy and punctilious standardisation. The circulars of the Bureau are, in fact, very careful and admirable scientific publications conveying a vast amount of extremely useful information, usually written in a human way and having behind them nothing in the shape of an act of legislature or compulsory standardisation. The Government gives a lead, it shows you something of which you may avail yourself; you may take it or leave it, but, at any rate, it is there. It is a calamity that we cannot say as much for our own country, where a Board of Trade hardly seems to understand what you mean when you ask it to embody a scientific element.

In one of its latest circulars¹ the U.S. Bureau of Standards enters upon a new path, attempting to reach the household:—“(1) To give information as to wants, methods, and instruments of measurement useful in household activities; (2) to describe available means of assuring correct quantity in articles bought by weight and measure; and (3) to give other facts of interest which would awaken an appreciation of the rôle of measurement in daily life.”

Stress is laid on the educational value of such measurements and on the increase of efficiency in the household, which comes from the habit of thinking in terms of units and definite quantities. The introduction is indeed a temperate and admirable appeal for increased accuracy and better knowledge in the use of household appliances and in the conduct of household operations.

The substance of the circular is comprehensive. It includes chapters on commodities, heat, light, electricity, gas, water, atmospheric humidity, atmospheric pressure, density of liquids, time. In each case the trade and household measuring instruments related to these topics are carefully described both in principle and in mechanical detail, and excellent illustrations abound. There is an abundance also of useful hints directed towards securing efficiency and

¹ U.S. Department of Commerce. Circular of the Bureau of Standards No. 55. “Measurements for the Household.”

economy, and, in fact, the circular might be called in many respects a treatise on that ambiguous subject known as domestic science.

As such it suffers from a common defect, namely, the attempt to expound scientific principles piecemeal and incidentally, or parenthetically, to single applications. This kind of defect is always visited with severity by the more academic critics, but it may be urged that the defect is not so great as it seems. It is true enough that the contents of this circular, so far as they call for scientific comprehension, will be unassimilable by the ordinary mistress of the household who has only received the one-sided and largely unnegotiable gift of “a good general education.” But it is equally true that the anchorage of sound scientific explanations to things and processes of the most obvious practical utility is as likely as anything to direct attention to what has been neglected in one generation and may be secured to another.

Something must be done to demonstrate the place of science in practical affairs, and this seems a legitimate way. Our educational masters seem to make most of their mistakes by forgetting that they are exceptional members of society in having an enthusiasm for abstract knowledge. No doubt the love of knowledge for itself exists to some degree in everyone, and may be developed; but the ordinary circumstances of the world make most people, even at an early age, want to know what use is to be made of knowledge. The fastidious exclusion of the useful from the exposition of the good and true is an unnecessary and fatal extravagance of the pedagogue, and nowhere has its incidence been more lamentable than in the case of natural science. Are we not at the moment bemoaning a nation that does not even know that science is useful? Who or what is responsible for this? Many answers are given, but none is nearer the truth than this: that our teaching has failed. How and where it has failed might be well illustrated by this circular, if those who are engaged in teaching science to the future housewives of England could be examined upon the contents. We should see the reason why such a gap remains between the science of our schools and science in actual use. There is a missing link. It is true of the domestic world, it is true of the industrial world, it is true of the whole national life, and there is urgent need of a remedy. The publication under notice helps to fill one gap, and it should be of real value to those engaged in teaching science to future housewives; and it will help also towards making boys' science more mobile in their homes.

A. S.

THE CLOSING OF MUSEUMS.

A PROTEST against the closing of museums (including art galleries) was made to the Prime Minister on February 10 by a deputation representing the Museums Association, the National Art Collections Fund, the Royal Asiatic Society, the Hellenic Society, the Art Workers'