

Palms generally rank among the most important tropical plants, and along the Amazon and its tributaries, especially near the embouchure, they form such prominent objects in the landscape that all voyagers make special mention of their luxuriance and variety. Dr. Huber devotes a number of plates to different species. *Phytelephas microcarpa*, that yields vegetable ivory, the Tucuma and Mumbaca palms, both species of *Astrocaryum*, the Javary, another species of the same genus, bearing spines on the young trunks, and the Bussu, *Manicaria saccifera*, producing huge, almost entire, leaves, are illustrated in the first two parts. No less interesting are *Cocos inajas*, with pinnæ arranged in bundles on the leaves, the Baccaba or wine-palm, *Oenocarpus distichus*, remarkable for the distichous arrangement of the leaves, and the Urucury, *Attalea excelsa*, which provides the *Seringueiro*, or rubber collector, with nuts used in smoking the rubber. Of trees other than palms, the famous Para rubber tree, *Hevea brasiliensis*, *Dipteryx odorata*, the source of the Tonca bean of commerce, *Bertholletia excelsa*, the superb tree yielding brazil-nuts, and the magnificent *Caryocar villosum* are selected for representation.

Dr. Huber has also chosen some illustrations of typical plant formations, including the littoral vegetation on the river Couany, where the Aninga, *Montrichardia aborescens*, is growing on the shore; scenes from some of the 'tidal creeks or channels known as "igarapés"; plant formations occurring in inundated localities, showing in one case a fine development of *Ipomoea fistulosa*, in another a wide expanse of *Panicum amplexicaule*; and a view of an Indian plantation with manioc and sugar-cane in the foreground, and the characteristic Imbauba, *Cecropia peltata*, beyond.

The illustrations are admirable, owing to the care that has been exercised in selecting fine specimens and suitable situations from which the characteristic features of the plants can be brought into the photographs.

Cams, and the Principles of their Construction. By George Jepson. Pp. 60. (New York: D. van Nostrand Co.) Price 8s. net.

IN this work examples are given of the design of cams of various types, including cylindrical, conical, face, and spherical cams, and of different degrees of complexity, from the simple heart-shaped cam employed in winding bobbins to the writing cam with the differential motions of paper and style. The illustrative drawings are accurately and beautifully executed, the construction lines being printed in red ink for the sake of extra clearness. It is shown how to design the profile of a cam so as to give a simple harmonic motion or a uniform acceleration and retardation to the follower, thereby effecting a change of position of the latter with a minimum wear and tear. The book is a welcome addition to the somewhat scanty literature on the subject.

Rivetage. By M. Fricker. Pp. 168. (Paris: Gauthier-Villars and Masson et Cie., n.d.)

THIS little volume belongs to the "Encyclopédie scientifique des Aide-mémoire" series, to which attention has often been directed in these columns. It is divided into two parts; the first passes in review the rules—for the most part empirical—which are adopted in determining the dimensions of rivets and in riveting generally, and the second describes the methods which are employed in the actual processes of riveting.

NO. 1950, VOL. 75]

LETTERS TO THE EDITOR.

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A New Mud-Volcano Island.

ADMIRAL FIELD'S letter in NATURE of February 28, embodying Commander Beauchamp's description of a new island recently discovered by him about nine miles north-west of Cheduba (not Chebuda) Island, off the coast of Arakan, leaves no room for doubt that the island in question was due to the eruption of a submarine mud volcano.

Ramri and Cheduba, together with the adjacent subordinate islands, are composed mainly of shale and sandstone (probably of Tertiary age), containing some coal, and also very considerable quantities of petroleum, accompanied by inflammable gas. There is evidence of a certain degree of abnormal subterranean heat, although such is far lower than that associated with true volcanoes, which do not exist, nor have any volcanic rocks been observed. Mud volcanoes are fairly numerous, which, besides emissions of a quieter character, are subject, at uncertain intervals, to violent paroxysmal eruptions. At such times mud and stones are shot out with great force and noise, accompanied by large quantities of inflammable gas, which in many cases catches fire, and gives rise to a volume of flame that lights up the country for miles around. There are numerous well-authenticated descriptions of such occurrences, more than one of which were submarine. The stones ejected are all derived from the stratified rocks mentioned above, the shales furnishing the source of the mud. Electric sparks, produced by the friction of the ejecta amongst themselves, probably cause the ignition of the gas. Some of the recorded paroxysms were synchronous with earthquakes.

A somewhat detailed account of the mud volcanoes may be found in the "Records of the Geological Survey of India," vol. xi. (1878), pp. 188-207, and descriptions of several later eruptions in subsequent volumes.

Ealing.

F. R. MALLETT.

A New Chemical Test for Strength in Wheat.

THE principle of the test for strength in wheat flour described as new by Mr. T. B. Wood in a recent issue of NATURE (February 21), and further claimed by Dr. E. Frankland Armstrong (NATURE, March 7) as having been in regular use in his laboratory during the past year, was employed by me more than four years ago, and still forms an important factor in my physicochemical method of gauging the baking qualities of wheat flour.

I can fully corroborate Mr. Wood's opinion that no single factor is capable of measuring the strength value of wheat, and Dr. Armstrong's statement that the problem is one in which no small number of variables must be dealt with.

In 1905 Mr. A. E. Humphries supplied me with five samples as tests of the accuracy of my system as then elaborated. I was, however, not successful; but, on receiving Mr. Humphries' views of their baking qualities, the cause of my failure was at once apparent. When investigating the relation of chemical composition to baking qualities, I had relied for the latter data upon loaves baked in tins, whilst Mr. Humphries based his opinions upon self-supporting loaves of the "cottage" type. It thus became evident that it was necessary to view the analytical data from a standpoint suited to a definite system or method of baking. That different systems of baking require different types of flour explains why millers occasionally receive both commendatory and condemnatory remarks from their customers on the quality of the same blend of flours.

I hope soon to have an opportunity of publishing some of the results of my investigations of the correlated factors determining the blending qualities, strength, and texture properties of wheat flour.