

hevea, I mixed a solution of carbonate of soda with the milk of the papaw. No clot is formed, even when pure water is poured on a mixture of the milk with the alkaline solution. The membranes appear only when, by adding an acid, the soda is neutralized, and the acid is in excess. I made the coagulum formed by nitric acid, the juice of lemons, or hot water, likewise disappear by mixing it with carbonate of soda. The sap again becomes milky and liquid, as in its primitive state; but this experiment succeeds only when the coagulum has been recently formed.

On comparing the milky juices of the papaw, the cow-tree, and the hevea, there appears a striking analogy between the juices which abound in caseous matter, and those in which caoutchouc prevails. All the white and newly prepared caoutchouc, as well as the waterproof cloaks, manufactured in Spanish America by placing a layer of milk of hevea between two pieces of cloth, exhale an animal and nauseating smell. This seems to indicate that the caoutchouc, in coagulating, carries with it the caseum, which is perhaps only an altered albumen.

The produce of the bread-fruit tree can no more be considered as bread than plantains before the state of maturity, or the tuberous and amylaceous roots of the cassava, the dioscorea, the *Convolvulus batatas*, and the potato. The milk of the cow-tree contains, on the contrary, a caseous matter, like the milk of mammiferous animals. Advancing to more general considerations, we may regard, with M. Gay-Lussac, the caoutchouc as the oily part,—the butter of vegetable milk. We find in the milk of plants caseum and caoutchouc; in the milk of animals, caseum and butter. The proportions of the two albuminous and oily principles differ in the various species of animals and of lactescent plants. In these last they are most frequently mixed with other substances hurtful as food; but of which the separation might perhaps be obtained by chemical processes. A vegetable milk becomes nourishing when it is destitute of acrid and narcotic principles; and abounds less in caoutchouc than in caseous matter.\*

\* The milk of the lactescent agarics has not been separately analysed; it contains an acrid principle in the *Agaricus piperatus*; and in other species it is sweet and harmless. The experiments of MM. Braconnot,