

I have endeavoured by these comparisons to bring into consideration, under a more general point of view, the milky juices that circulate in vegetables; and the milky emulsions that the fruits of the amygdalaceous plants and palms yield. I may be permitted to add the result of some experiments which I attempted to make on the juice of the *Carica papaya* during my stay in the valleys of Aragua, though I was then almost destitute of chemical tests. The juice has been since examined by Vauquelin, and this celebrated chemist has very clearly recognized the albumen and caseous matter; he compares the milky sap to a substance strongly animalized,—to the blood of animals; but his researches were confined to a fermented juice and a coagulum of a foetid smell, formed during the passage from the Mauritius to France. He has expressed a wish that some traveller would examine the milk of the papaw-tree just as it flows from the stem or the fruit.

The younger the fruit of the carica, the more milk it yields: it is even found in the germen scarcely fecundated. In proportion as the fruit ripens, the milk becomes less abundant, and more aqueous. Less of that animal matter which is coagulable by acids and by the absorption of atmospheric oxygen, is found in it. As the whole fruit is viscous,* it might be supposed that, as it grows larger, the coagulable matter is deposited in the organs, and forms a part of the pulp, or the fleshy substance. When nitric acid, diluted with four parts of water, is added drop by drop to the milk expressed from a very young fruit, a very extraordinary phenomenon appears. At the centre of each drop a gelatinous pellicle is formed, divided by greyish streaks. These streaks are simply the juice rendered more aqueous, owing to the contact of the acid having deprived it of the albumen. At the same time, the centre of the pellicles becomes opaque, and of the colour of the yolk of an egg; they enlarge as if by the prolongation of divergent fibres. The whole liquid

* The same viscosity is also remarked in the fresh milk of the *palo de vaca*. It is no doubt occasioned by the caoutchouc, which is not yet separated, and which forms one mass with the albumen and the caseum, as the butter and the caseum in animal milk. The juice of a euphorbiaceous plant (*Sapium aucuparium*), which also yields caoutchouc is so glutinous that it is used to catch parrots.