

figures by the natives, for I found the following remarks in Harper's Magazine of Sept. 1869, written by Thomas C. Evans, who has there given us a very interesting account of the manners and customs of the Brazilians; he says, when describing the inhabitants of Para:—

"The Paraneze or natives derive their origin from an odd assemblance of races. The aboriginal and negro elements appear to predominate, though their traits are intermingled with those of Lusitania and Catalonia, and in a lesser degree with those of every people under heaven. The native Amazonian Indians have adopted urbano habits, and adjusted themselves to the restraints and industries of civilized life. They are shop-keepers and artisans, water-carriers, porters, gamblers, loafers, and what-not. Not a few retain the primitive Indian aspect. They have the long straight, coarse hair, and the expression of mingled cunning, fear and ferocity which distinguish their brethren of the woods. One involuntarily feels for his scalp while buying little articles of these harmless descendants of the warlike Purupurus and Tupinambos, and almost expects his bargaining to be interrupted by the war-cry and the whiz of arrows. In general, however, they are mixed with other races. Abyssinia and Nubia have contributed kinks to the straightness of the Amazonian hair, impressed additional flatness upon noses too flat already, and elongated heels which needed no such supererogatory extenuation. Portugal has aided in this transformation, so that the result is something compounded of the Portuguese, and the Brave.

"They are quite ingenious in some branches of manufacture. They make hats out of fibres of the palm, pipes from the red clay of the river, stems from long hollow reeds, which they paint and decorate with gilding after a rude but highly ornamental fashion. I was interested in examining some specimens of their more ambitious artistic efforts. The vehicle of these attempts was "guarana," a dark, resinous gum, which exudes from a tree, and is said to be a medicine as potent as quinine, though I believe it always kills, while quinine sometimes cures. They fashion this gum into various form:—snakes, lizards, birds, ant-eaters, monkeys, jugs, cups, pitchers; and the more aspiring and ambitious adventure upon the imitation of the human figure. The results are more like the clumsy hideous idols of India and Egypt than like the sculptures of Canova or Angelo; but their arms and legs are very distinct, and there is no mistaking their heads; and though they are a little uncertain as to toes and noses, their import is discernible without verbal or written elucidation."

The masses of guarana are of a reddish brown colour, rough on the surface, and marbled or mottled internally; the taste is bitterish and astringent, but it is odorless; it swells up, softens, and but partially dissolves in water; ether does not extract the whole of its active agent. Deschastelus ascertained that alcohol alone exhausts it of its medicinal virtues.

On chemical examination Martius discovered in it a crystallizable principle, which he called *guaranin*; this was proved, by MM. Berthemet and Deschastelus, to be identical with caffeine and thein. It exists in the seeds in combination with tannic acid, with which it appears to form two compounds: one, crystallizable and soluble in water, the other, resinoid and insoluble; the seeds also contain free tannic acid, gum, albumen, starch, and a greenish fixed oil. A more recent analysis has been made by M. Fournier, and the following appears as the result:—Tannate of guaranin, free tannin, gum, starch, an acrid green fixed oil, a concrete volatile oil, an aromatic liquid volatile oil soluble in water with a little alcohol, another liquid volatile oil scarcely soluble in water, a peculiar principle not yet determined. Peckolt's analysis, quoted in the proceedings of the American Pharmaceutical Association of 1868, is as follows:—Caffein, yellow fixed oil, resin, nitrogenous extractive, red colouring matter, amorphous bitter principle, guaranic acid, saponin, gallic acid, tannic acid (iron greenening,) albumen, starch, glucose, dextrine, pectin, mucilage, malic acid and cellulose.

*Guaranin* is composed of  $C_8H_{10}N_4O_2 + QH_2O$ ; it is isomeric and said to be identical with *caffeine* obtained from the *Coffea Arabica*; with *thein* derived from the *Thea Chinensis*; and also with *psoralein*, the active principle of the *Psoralea glandulosa* or Paraguay tea. This is an interesting fact, that the same principle should be found to exist in four different plants belonging to as many distinct natural families.

Coffee contains from  $\frac{1}{4}$ —1 per cent.; gunpowder tea from 1—3 per cent., black contains more than green tea; Paraguay tea from 1—2 per cent., and guarana 5.07 per cent., or twice as much as the best tea, according to Dr. Stenhouse.

This alkaloid may be prepared by precipitating the tannic acid from a hot infusion of tea, coffee, &c., with a solution of subacetate of lead, boiling the mixture, filtering, removing the excess of lead by hydrosulphuric or sulphuric acid, evaporating the clear liquor, and re-crystallizing the product.

A. Vogel's, jun., method is as follows: powdered coffee is extracted by commercial benzol, this is distilled off, and leaves an oil and caffeine behind; the oil