VEGETABLE POISONS.

THEIR USES AND THE PLANTS FROM WHICH THEY ARE OBTAINED.

Theories as to Why Poisons Are Secreted in Plants—Fishing With Poisons in India—Poisons and Hospitality in the Orient.

It is not so very many years ago when the majority of the afflicted of mankind turned instinctively to the woods and fields for herbs and simples to cure them of their ills. It did not require much research to discover that side by side with plants most beneficial grew many deadly to man and his lesser brothers, the animals. It is a question which character of plants a primitive people availed themselves most of, for poisons were long considered convenient and safe means for disposing of an enemy, and their use has not yet been abandoned by more or less savage tribes.

Today the vegetable kingdom is still largely depended upon for poisons and palliatives, medicines and pain killers, real or imaginary, but the fact is generally lost sight of in the bewildering array of extracts and tinctures, chemicals and narcotics displayed on the apothecaries' shelves in lieu of the bundles of herbs which used to hang from the ceiling or rafters of the earlier shops.

A professor of the College of Pharmacy recently reminded a number of botanists and their friends in a lecture at the New York Botanical garden of the vegetable poisons and their strange uses. Although he talked for an hour, he had to regret that the time was too brief to more than touch upon the subject. He began by pointing out that some plants popularly regarded as poisons are not so, but act mechanically. Such are some of the western grasses, which kill sheep by their long, sharp, stout barbed awns, which pierce the digestive organs and cause fatal inflammation.

In order to be poisonous, the effects in or upon the body must be chemical or molecular. Hence, it is not the plant body which is poisonous, but some chemical constituent within the cells. Often these substances can be seen with the microscope, in crystalline form, in the dried plant tissues. This is true of strychnine in nux vomica seeds. In other instances the poisons cannot be seen, and are very difficult to separate and study.

Students are divided in opinion on the question, "Why are poisons present in plants?" One answers that they are not there for any purpose; that they are waste processes, and are poisonous because such substances are usually so, and that the plant deposits them in leaves, outer bark, fruits and seeds, until it can get rid of them by the falling off of these deciduous parts.

Another view is that during such time as they remain they are of use to the plant, and it is for this reason that they exist in its body in the form and with the properties they possess. The percentage of poison varies with the stage and development of the plant or with the season, and such variations usually coincide with the need of greater or less protection by the plant. The poison of the henbane, for instance, changes its location from one part of the plant to another, according to its special need of such a safeguard.

Other substances harmless to man are deadly to vegetable germs which cause the plant to decay. They are usually produced when needed, and many of them are never brought forth otherwise. The important medicinal substance, copaiba, is stored in the tree trunks as soon as decay produces a cavity. It tends to check decay, but if powerless to prevent it continues to increase in quantity. Substances used by plants for antiseptic purposes have been utilized by man for the same purpose, while substances poisonous in large amounts have been found to bring about improvement in diseased conditions in modified and reduced doses.

Catching fish with poison is so common, among the Indians at least, that the fruit of the Cocculus indicus, the substance oftenest used, is best known as fish berry. Its poisonous constituent is picrotoxin, which acts in many ways like strychnine, but does not affect the wholesomeness of the fish for food. In tropical America many vegetable substances containing sapronin and tannin are used for the same purpose. The sapronin acts somewhat like strychnine, while the tannin is said to act by combining with the free oxygen in the water, compelling the fishes to come to the surface for oxygen. In all these cases the fish are merely intoxicated and caused to flounder helplessly to the surface, where they are easily caught. Humanity, as a whole, has come to look upon poison as a too cowardly and ignoble weapon for any class to employ, so convicted criminals can now eat their meals with safety and one's enemies feel equally secure at table. In India, however, poison is still an approved weapon of revenge, and the cattle of the enemy are the most common victims.

Human beings are frequently poisoned in India to the extent of rendering them intoxicated or stupid, to facilitate robbery. For this purpose stramonium or datura, here the common weed of the ash heap and waste pile, is commonly employed. In India a pestle is frequently employed in the preparation of food. One with a hollow handle is used, if the guest is to be robbed. With the hollow filled with stramonium seeds it is an easy matter to mingle some of them with the food and grind both together under the very eyes of the victim. To rob the guest while in the house would be a breach of oriental hospitality, but by the time he takes his departure he is in a condition favorable for being followed and despoiled of his property. Belladonna is sometimes used for a like purpose. It may seem a curious coincidence that in the days of a "wide open" city certain keepers of notorious resorts were known to boast that no one was ever robbed in their places, but of course they could not be expected to guarantee that guests would not be followed and robbed outside.

Jealous women in India poison their rivals with the root of the oleander, a favorite, half hardy ornament of northern gardens and conservatories. In the same land powdered aconite root is used to poison arrows. A paste made from this powder is applied to the entire head and a part of the shaft so thickly as to add considerably to its symmetry. In other cases poison is used in very small amount. The woorara, used by the Orinoco Indians for tipping the tiny arrows of their blowguns, is a noted example. The action of this poison is most intense, the muscles, especially those of breathing, being promptly paralyzed. Monkeys drop dead almost the instant they are wounded with a weapon smeared with it. If an antidote is quickly applied they recover and are thus captured alive. Common salt is said to be one such antidote.—New York Post.

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