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CARNIVOROUS PLANTS.

The admirable researches of Charles Darwin have lately revived this subject, and indeed finally established the fact, that some plants, especially certain members of the order Droseraceæ, not only kill certain animals, but digest their dead bodies just as we digest food in our stomachs; that is to say by means of an acid secretion, and a specific ferment allied to, if not identical with, pepsin. His experiments were chiefly made on *Dionæa muscipula* and *Drosera rotundifolia* the former an American and the latter an English species; and both have roots so scanty as to seem hardly sufficient for the sustenance of the somewhat luxuriant superstructure.

Accordingly this would appear to be nourished by the numberless insects or even minute worms (as observed in America), which are entrapped, killed, digested, and assimilated, through the operation of peculiar structures in the leaves and their appendages. We said "revived," because more than a century since the question was entertained and regarded as a very curious one, especially in relation to the *Dionæa*. It was one of the wonder of the day. Thus the eminent Irishman, John Ellis, F. R.S., the great illustrator of the nature of corallines, writing in 1770, to Linnæus, and to the then Duchess of Norfolk, calls the *Dionæa*, or Venus's fly-trap, "a new and wonderful sensation plant, formed in such a manner as if the Great Author of Nature intended it to receive some nourishment from the animals it seizes. For in the internal part of the two lobes of each leaf are three little spines amid the little red glands. These seem to be the irritable part. As soon as a fly or other insect touches these, when the leaves are young and vigorous, the leaf-lobes immediately close upon it, and the spines either stick to it or seem to prevent its escape, where it remains till it dies."

Thus far one of John Ellis's communications on the subject, which be illustrated by a drawing, and of which he mentions a print; but not having the original at hand we quote from memory. And the botanical traveller in America, William Bartram, of whose admirable book of travels a second edition was published in 1794, has no bounds to bid admiration of "this carnivorous vegetable," as he calls the *Dionæa*.

Of the travels of this worthy man, though the work of a person of little literary or scientific pretensions, it is noteworthy that it was the last of a great race, presenting as it does more of the animated simplicity of narrative and adventurous spirit of the old voyagers than most books since published of the same kind. In these points even Darwin, in his great Voyage with Captain FitzRoy, pales before old Bartram. As already noticed, Darwin's observations on insectivorous plants were made on the leaves. But at a late meeting at Canterbury, of the East Kent Natural History Society, Professor Gulliver, F.R.S., after discussing the subject historically, produced a plant with white flowers, into the tubes of which large moths, bumble

bees, and flies, were squeezed head foremost and killed; sometimes three of these different insects thus dying together within the dilated tube of one corolla. This discovery, if discovery it be, was made by Major Hall, at Exeter, who sent the specimen to Canterbury. The plant, after some trouble was made out to be *Auraja albens* of Decandolle's "Prodromus," and *Physianthus albens* of other botanists.

It is one of the Asclepiads, an order of which there is no representative indigenous to Britain; and the derivation of the generic name, from *physa*, a bladder, and *anthos*, a flower indicates the dilated tube of the corolla wherein the insects meet their death. The plant, though cultivated in stoves in England, may be more hardy than to demand such care, as a variety of it flourished some years against an outside wall at Fulham. The original plants were brought to England by a celebrated Brazilian traveller, Von Martius, in 1830. Major Hall's discovery clearly proves that this species imprisons and kills insects in its corolla at Exeter; and we may expect that numberless other plants may be some day proved possessed of a similar character in the vast forests or the tropics. At present, though *Physianthus* certainly kills the insects, observations are yet wanting to show whether it digests them; if not, to what end are they lured to their doom? To be sure, the insects might retort, were they able, to what end are gentlemen lured out of Bond-Street to their doom in the gambling-houses hard by? No doubt, amid the wonderful luxuriance of vegetation in South America, many plants thus making victims of animals remain to be discovered; for it is remarkable that the great botanical traveller, Von Martius, never seems to have directed his attention to the subject. Meanwhile, it may well be further investigated in Britain, so as to afford an amusing and a rational pursuit, and become at once an addition to the many scientific observations which are fitted to sweeten and adorn rural occupations.-
Land and Water.