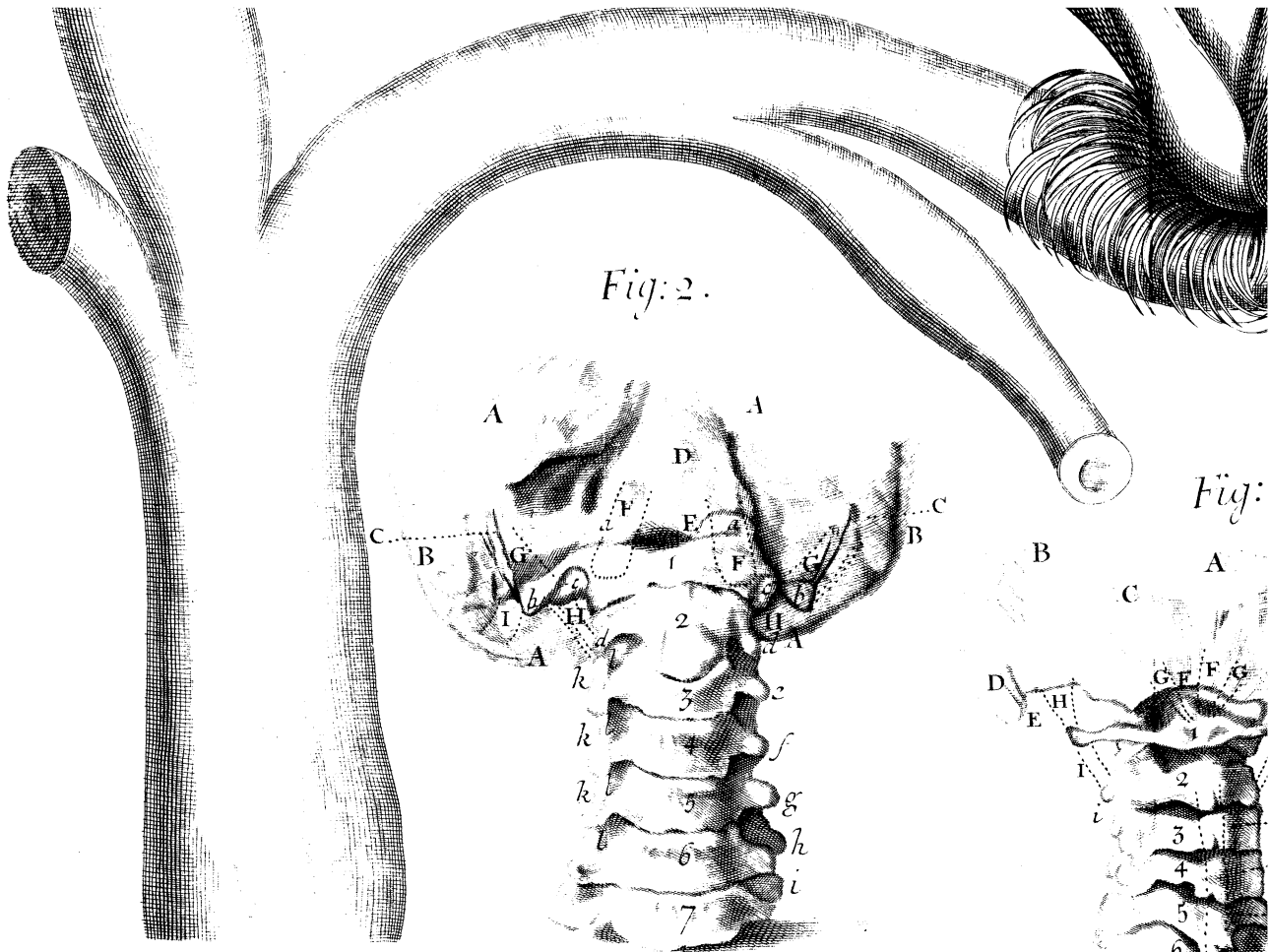




Fig: 1.



Fig: 2. of Dugre.



I. Start sculp:

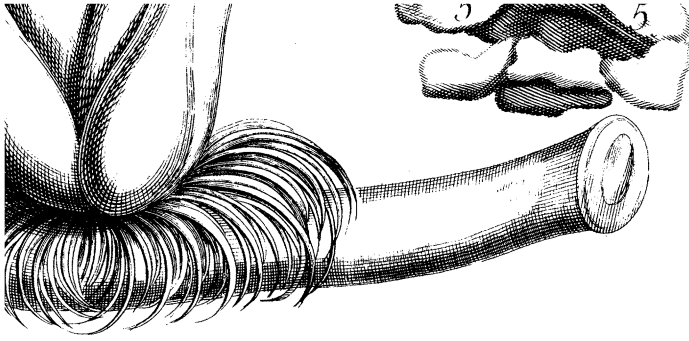


Fig: 1. of Dujre.

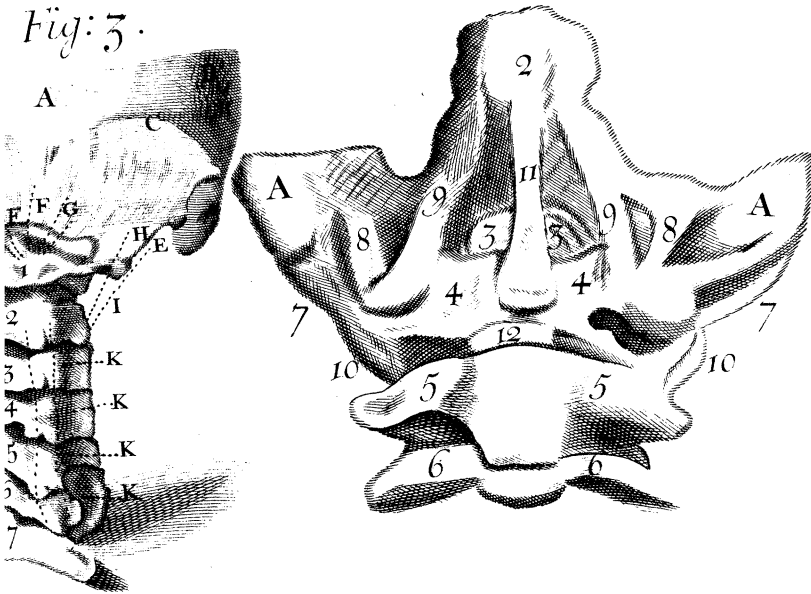


Fig: 3.

II. *Some Observations made at a Meeting of the Royal Society, Concerning some Wonderful Contrivances of Nature in a Family of Plants in Jamaica, to perfect the Individuum, and propagate the Species, with several Instances analogous to them in European Vegetables.* By Hans Sloane, M. D.

THE many Contrivances of Nature, or rather the Supreme Being, who Created, and orderly disposed all things, to bring to Perfection several Vegetables and Animals; and after the unavoidable dissolution of the *Individuum*, to keep the *Species* from being lost, notwithstanding many adverse Contingencies and Necessary Ends they are design'd to serve, seems on many Accounts to Deserve, if not Require our Regard and Attention. Those who spend some of their time in these Observations, will not want Occasions of Admiring the great Wisdom and Power of the first Contriver and Preserver of all things; nor Means, by imitating Nature, to bring some of the most useful Arts to a greater Perfection, then hitherto they have come.

I shall at this time endeavour to Entertain the Society with some Observations of this kind, that I thought sufficiently Recompens'd some pains I was at, by the pleasure I had in admiring the Mechanisms I met with, then shew the things themselves to the Members present.

In *Jamaica*, the Neighbouring Isles, and Continent of *America*, grow many sorts of *Mistletoe*, *Parasitical*
R Plants,

Plants, as they are called by some, or *Epidendra* by others; which grow not on the Ground, on Rocks, or in Waters, &c. but on the Bodies or Arms of Trees, after the manner of *Misseltoe*, like to which they bring forth Roots, Leaves, Stalks, Flowers and Seed. There being none other but *Misseltoe* in *Europe*, so remarkable for these Particulars, I was constrained, to Convey the clearest Idea of the thing to be described, to give the Name *Viscum*, to all the several Families of them, tho' they differ'd very much from it, and almost as much among themselves, by that name designing only a Plant like it in growing on Trees, and bringing forth Roots, Leaves, Stalks, Flowers and Seeds on them, as other Plants do on the Ground, or in the Soils they grow.

The particular Family of these I now intend to speak of; is that kind I have called *viscum Cariophylloides*, from having its seed Vessel somewhat like that of *Clove-July Flowers*, and the particular one of that Family I shall describe, whereby to give a Notion of the rest, shall be what I name in my Catalogue of *Jamaica Plants*, p. 76. *Viscum Cariophylloides maximum flore tripetalo pallide luteo semine filamentoso*, and which is commonly in that Island called, *Wild Pine*, whose Description follows: A great many brown Fibrils encompass the Arms, or take firm hold of the Bark of the Trunk of the Trees whereon they grow, not as *Misseltoe*, entering the Bark or Wood, to suck Nourishment, but only weaving and matting themselves among one another; and thereby making to the Plant a firm and strong Foundation, from whence rise several Leaves on every side, (*fig. 1. a a, &c.*) after the manner of Leeks, *Ananas*; whence the Name of wild Pine, or Aloes, being folded or enclosed one within another, each of which

which is two Foot and a half long, from a 3 Inch breadth at beginning or base, ending in a point, having a very hollow or concave inward side, and a round or convex outward one; so that by all of their hollow sides, is made within a very large Reservoir, Cistern or Basin, (*fig. 1. b.*) fit to contain a pretty deal of Water, which in the Rainy Season falls upon the uppermost parts of the spreading Leaves which have Channels in them, conveying it down to the Cistern where it is kept, as in a Bottle, the Leaves after they are swell'd out like a Bulbous Root, to make the Bottle bending inwards, or coming again close to the Stalk, by that means hindering the Evaporation of the Water by the heat of the Sun; they are of a light green Colour below, and like Leeks above: From the midst of these rises a round, smooth, straight fresh green coloured Stalk, three or four Foot long, (*fig. 1. c.*) having many Branches, when wounded yielding a clear, white, mucilaginous Gum; the Flowers come out here and there on the Branches, they are made up of three long yellowish, white or herbaceous Petals, and some purple ended Stamina, standing in a long Calix or Tubulus, made up of three green viscid Leaves, with purple edges, to which follows a long Triangular Capsula, (*fig. 1. d.*) greenish brown, being somewhat like those of the *Cariophylli*, having under it three short capsular Leaves, and within several long pappous Seeds, the Seeds its self being oblong, pyramidal and very small, having very soft hairs, down, or tomentum, much longer in proportion to the Seed, than any tomentum I know, being as long as the Pod or Capsula.

It grows on the Arms of the Trees, every where in the Woods, as also on the Barks of their Trunks, especially when they begin to decay, their Barks receiving the Seed, and yielding then more easily to the Fibrils of this Plant's Roots, which in some time dissolves them, and ruins the whole Trunk.

The Contrivance of Nature in this Vegetable is very admirable and strange, the Seed has long and many Threads of tomentum, not only that it may be carried every where by the Wind, as pappous and tomentose Seeds of *Hieracium*, *Lifymachia*, &c. are; but also, that it may by those Threads, when driven through the Boughs, be held fast, and so stick to the Arms and extant Parts of the Barks of Trees; so soon as it sprouts or germinates, altho' it be on the under part of a Bough, or the Trunk of the Tree, its Leaves and Stalk rise perpendicular or streight up; because if it had any other Position, the Cistern before mentioned (by which it is chiefly nourished, not having any Communication with the Tree) made of the hollow Leaves, could not hold Water which is necessary for the Nourishment and Life of the Plant.

In the Mountainous as well as dry low Woods, in scarcity of Water, this Reservatory is necessary and sufficient, not only for the Plant it self, but likewise is very useful to Men, Birds, and all sorts of Insects, whither in scarcity of Water they come in Troops, and seldom go away without Refreshment.

Besides, the Authors mentioned in my Catalogue of *Jamaica* Plants, p. 76. to take notice of this Plant I find *Huldrich Schmidel*, cap. 46. p. 77. of his *Navig.* Printed 1599. 4to. to have the following passage, which I believe relates to this herb.

Ex

Ex nostris autem hominibus multi siti moriebantur, licet ad hoc iter apud istos Carchconos mediocri aquæ copia nos instruxeramus. Inveniebamus autem in hoc itinere, radicem supra terram extantem, magna lataque folia habentem, in quibus aqua tanquam in vase aliquo manet, nec inde effunditur, nec etiam tam facile consumitur, capitque una harum radicum aquæ circiter dimidiam mensuram.

And Capt. *Dampier*, in his *Voyages*, Vol. 2d of *Campeche*, p. 56. says thus.

‘ The *Wild Pine* is a Plant, so called, because it
 ‘ somewhat resembles the Bush that bears the Pine: they
 ‘ are commonly supported, or grow from some Bunch,
 ‘ Knot or Excrecence of the Tree, where they take root
 ‘ and grow upright. The Root is short and thick, from
 ‘ whence the Leaves rise up in Folds, one within ano-
 ‘ ther, spreading off at the top: They are of a good
 ‘ thick Substance, and about Ten or Twelve Inches long,
 ‘ the outside Leaves are so compact, as to contain the
 ‘ Rain Water as it falls, they will hold a pint and a half
 ‘ or a quart: and this Water refreshes the Leaves, and
 ‘ nourishes the Root. When we find these Pines, we
 ‘ stick our Knives into the Leaves, just above the Roots,
 ‘ and that lets out the Water, which we Catch in our
 ‘ Hats, as I have done many times to my great Relief.

There are some Contrivances in Plants growing in some *Europe*, come near these of this kind of Vegetables in particulars. The *Virga pastoris*, or wild teasel, (and most *Plants* call’d *Perfoliated*) has its Leaves enclosing its Stalk, and so set by pairs opposite to one another, and joined by their Bases, that they make a hollow place fit to contain some Water, which though open, yet without doubt, contributes to the perfecting of the Plant.

Several

Several *Fuci* are lately discovered to have Seeds, which when ripe break out of their places, and by means of a glewy Juice, fasten themselves to the Stones or Substances at bottom of the Sea, where they are to grow. The common *Viscum* has such a glewy substance, I suppose, for fastning its Seed to the Barks of Trees.

Small *Mosses* heretofore thought to have no Seed, are now known to have great Plenty, and that so small, as I have seen it rise up from the ripe Head in Form of Smoak, which is without question, that it may be carried by the Air and Wind, to Walls, Trees, or other fit Matrix for its Vegetation.

There is a *Fungus* called by *Clusius*, *fungus minimus anonymus*, and by *Dr. Merret*, *Campaniformis niger multa semina plana in se continens*, which I have shewn this Society many years since, that when Ripe, opens to the Rain, which on filling a Cup, wherein lie its Seeds, they are washed out on every hand, to Propagate its Kind.

There are many Families of Plants with Pappous or Tomentose Seeds, as *Dandelion's*, *Erigerum's*, *Lyfimachia's*, *Clematis's*, *Anemone's*, &c. that when Ripe, their Seeds are, by means of their Feathers or Wings, scattered to all neighbouring Parts by the Wind. This is so effectual a way, that the *Aster Canadensis annuus non descriptus Brunyer*, *hort. Bles. p. 10.* or *Conyza annua alba acris*, *Morif.* which came at first from *Canada*, is now become a wild Plant in many places of *Europe*, where it never was observed to grow, and far from the Gardens where it was first Planted, from whence the Seed had been carried by its Wings, so that I have seen it in some Parts of *France*, very many Leagues from such Places.

There

There are likewise many Plants, which have Seed-Vessels so contrived, as with a spring, and sometimes smart noise, when they are ripe, to throw off their Seeds several ways, to a considerable distance; most Plants having Pods, as Furze, &c. those called, *Noli me Tangere's*, or *Herbæ Impatientes*, *cucumis aspinus*, Cranesbills, and many others, have this artifice to sow themselves. Amongst these who have this Property, none is more surprizing then one in *Jamaica*, called Spirit-weed, which when its Seed is ripe, the Vessel containing it, on the least touch of whatever is wet, does instantly open its self, and with a smart noise throw its Seeds several ways to a considerable distance. Likely the Design of Nature being, that the Rainy Season being proper for Sowing, its Seed should be kept in its Seed-Vessel, the best Preserver of it from Injuries, till then.

Lychnis's, *Poppies*, *Antirrhinum's*, and many others, have their Seeds in heads, which when ripe, are open at top, and by the Winds, and help of their Partitions, are scatter'd and directed to all Quarters.

These Instances, and many more, very obvious and wonderful, thô not taken notice of, might be given, to shew the great endeavours of Nature to perfect the *Individuum*, and propagate the Kind, which for that reason, I am apt to believe, are all (without the loss of one *Species*) Preserved to us from the Creation to this day.

It will be easy, from the History of the *Viscum* before mentioned, to believe, that no ordinary Culture could make this Plant rise from its Seed; and that if its Seed were planted in the richest Ground, it would certainly perish. Wherefore I am of Opinion, that one considerable way to improve Gardening, and the Culture

ture of Plants, would be to give a Description of the Plants themselves, then the Soils, Climates and Countries where the Vegetables to be Cultivated naturally grow, and what Seasons, Rains, and other Meteors they have, which being imitated, as much as possible, perhaps some Plants might thrive better, then now they do in the fattest Ground. And to this purpose, I have been assured by an Honourable and very Ingenious Person, that he has known some Plants, particularly *Centaurium minus*, which not growing the ordinary way, was tried by dropping the Seed on the Surface of the Ground, amongst the Grass, by which artificial imitation of Nature it came to Perfection, which no other ways could be brought about.

