

XI. *Some Observations relating to vegetable Seeds*; by James Parsons, M. D. F. R. S.

Read Nov. 22.
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AMONG the many Subjects in the Store-house of Nature, nothing, perhaps, is more entertaining, nor merits more the Attention of the Learned and Curious, than the Family of vegetable Seeds; and it is indeed surprizing, that, till now, they have not been made an exprefs Subject for the Consideration of some curious Naturalist, since Plants and Flowers have been treated of by so great a Number of Authors from the earliest Times.

It has been said lately, that the major Part of all the Seeds in the World are no more than minute *Molecules*; and so much alike, that little can be expected from them; whereas Plants and Flowers, being visible and beautiful, might be thought more worthy of Description and Delineation: But I should imagine, that those Parts of Nature which are least visible, and most obscure, require most to be inspected and explain'd, in order to render the Knowledge of them more general.

Pliny wisely says, "*Rerum natura nusquam magis quam in minimis tota sit*;" and, indeed, nothing is more true than that Assertion; for every Day's Experience confirms it: And altho' an *Elephant*, or *Camel*, has Organs, which, from heir noble Structure and Uses, are very wonderful, yet there is much greater Room for Admiration among us, that a Mire should be furnish'd with a greater Number of Limbs than so considerable

siderable an Animal; since all our Knowledge is relatively conducted; and because there is something extremely perplexed and intricate in our Notions of Minuteneſs.

Such Reflections as theſe prompted me to examine ſeveral ſmall Seeds; eſpecially ſome of thoſe, which, to the naked Eye, ſeem'd moſt like one another; and, to my great Surprize, I found them as different from each other in their Marks and Forms, as different *Genus's* of any other Claſs of the Creation; and, from their curious Characters and Beauties, I could not but conclude them as well worth obſerving and deſcribing as any other Subject whatſoever, that has already employ'd the Learned.

But, beſides thoſe many Beauties in their Forms, which, of themſelves, are a ſufficient Reason for their Examination, and well worth any Pains that may be taken about them, there are yet more engaging Inducements to excite the Curioſity of Mankind to it, which ariſe upon the Diſſection of the Seeds. Of this I have ſubjoined a few Examples, which I hope will be entertaining to this learned *Society*, as a *Specimen* of many Discoveries that will follow, in the Courſe of my Obſervations on the great Number of Seeds, that ſhall be the Subjects of my Study for ſome time.

The firſt is the Seed of the *Musk Scabious*, which, for its Shape and Structure, is amazing. It reſembles an octagonal *Vaſe* with a ſcalloped Brim: the Whole is Bell-shaped, having Ribs or Diviſions, which run down from the Mouth of the *Vaſe*, and, becoming narrower, form the Bottom: Between theſe Ribs, down to the Beginning of the narrow Part, it is clear;

tho' not quite transparent; and, from thence to the Bottom, the Ribs are hairy.

This *Vase* contains a Seed, which is like a *Pestle* standing in a *Mortar*: the *Pestle* is loose in an octagonal Case; but the Narrowness of the Mouth of this Case hinders the *Pestle's* being drawn out, because its Extremity, within, is round and bulky. From its upper End arise five spiculated *Aristæ*, whose little Thorns are directed upwards, and are thereby prepared to cause the Seed to recede from any thing that might injure it upon being touched; and the Basin, from which the *Aristæ* rise, is of a fine green Colour, They are of a shining Brown.

The second *Specimen* is that of the *Angelica*. It is one of the most fragrant and agreeable Seeds, for its Smell, in the World. When the Husk is pull'd off, the *Nucleus* appears of a brownish Colour, and its Shape is elliptical. By the Help of the *Microscope*, we know what produces that charming Smell, being a fine Amber-coloured *Gum*, which appears in Ridges disposed alternately, with others of a brownish Colour, in a longitudinal Direction all over the *Nucleus*. What appears white, on the flat Side, is a *Theca*, which receives a very minute *Stilus* from the Pedicle that supports it.

The third is that Seed which is vulgarly call'd *Grains of Paradise*. This Seed, altho' promising from its Aspect but very little that is curious, being only a brown irregular Seed with Flats and Angles, and having an *Apex* like the Mouth of a Purse drawn up with a String; yet, when dissected, nothing can produce a more beautiful Appearance. In a longitudinal Section, you see, first, the Edge of the brown
Cortex;

Cortex; next to that, a black pitchy Substance; and, within that, an exceeding white radiated Matter, which looks like a fine white Salt, and is, probably, a Mixture of a volatile pungent Salt with a farinaceous Substance; The Radiation seems to confirm this Opinion; for, if it were only a *Farina*, it could have no such Appearance, and so does its exceeding sharp Taste. But the most remarkable and curious Part of this Seed, is a little Piece of *Camphire*, exactly shaped like a common Vinegar-Crewet, having a round Bottom, and a long taper Neck. This is the constant Form in Hundreds of these Seeds that I have cut. These curious Appearances, I believe, were never observed before.

As I would always endeavour to avoid Prolixity, in any thing I have the Honour to lay before you, I shall, at present, only mention one more Seed, which is that of the great *Maple-Tree*. It consists of a *Pod* and its *Wing*: Two of these grow upon a Foot-stalk with the Pods together, which makes them resemble the Body of an Insect with a Pair of expanded Wings. The Wings are finely vasculated, and the Pod is lined with fine silky Down, which contains a round compact *Pellet* cover'd with a brown Membrane, that sticks very close to it. When this is peel'd off, instead of discovering a Kernel, as in other Seeds, an intire *green Plant* appears to be folded up in a most surprising manner, whose *Pedicle* is about two Eighths of an Inch long, and its seminal Leaves about six Eighths each; between which the *Germina* of the next Pair of Leaves are barely visible to the naked Eye, but plain with a *Microscope*. This Discovery gave me great Pleasure, as believing
myself

myself the only one who had observed it ; but, some time after, looking into *Derham's Physico-Theology*, upon another Account, I found it mention'd, as if Dr. *Higmore* had seen and communicated it to Mr. *Ray*. I believe, however, as none of this learned *Society* have seen it, except those I have shewn it to, the Sight of it will not be disagreeable.

Numbers of such amazing *Phænomena* appear every Day in my Observations (some of which shall hereafter be laid before you, if these prove acceptable), which excited me to a Resolution, of examining and describing all the *Genera* of Seeds. A Work which is now publishing under the Title of *The Microscopical Theater of Seeds*, &c. in a manner, which, I hope, will render Botany more easily understood, will hand down to Posterity the true Figures of every Seed and its Sections; and, by the new Discoveries, which often occur thro' the Course of my Observations, lay a Foundation for future Observers to build something useful upon; and settle some Points relating to the different Substances contain'd in Vegetables, which yet remain doubtful.

These were my Views in undertaking this Work; and from what I have said, I hope it appears, that since those Things, which are capable of being view'd and consider'd by the naked Eye, have been thought worth the Care of describing and delineating, the Objects before us much more want that Care, whose natural Beauties cannot be inspected nor enjoy'd, without Assistancess which every one cannot make due Use of.