

Reasoning what is plant anatomy due for?

Opinion

I graduated, but, I did not realize that, even though embodied as an Agronomist, I could have a Botanist soul. From the beginning of Botany as a science, we notice admirable refinements of Marcello Malpighi and Anton van Leeuwenhoek, without which we would not be due, particularly in the Plant Anatomy field. I admire acknowledged academic icons such as Dr. Abraham Fahn, Dra. Katherine Esau, and others, that are references akin to any undergraduate or graduate fellow. They revealed and broadcasted plant anatomy in a descriptive and accessible, sometimes idealistic, way. I will be biased in this attempt to enumerate each research, researcher and respective contributions, all relevant, and that will continue to be. This is especially true bearing in mind the hundreds of professionals that nowadays can use plant anatomy as an integrated, functional and applied tool, coping with the former descriptive goal. Despite the challenges of keeping and working as part of a team, the scarce resources, demand for publication at the same time as we are urged to be cautious on what to publish, we still live at a prompt environment for innovation and “use” of the plant anatomy state of the art, that, “yes!”, it is suitable to the light speed that reaches our ability to data dispersal. “Good will and imagination!” – That is one of the answers I give to my undergraduate students in response to questions like: “What do I get from these little circles I observe on the microscope?” or “What do I have to do with plant anatomy?” As Agronomist, I am fascinated for practicality and whatever uses that embraces, or allows, the applicability of a basic field of knowledge such as plant anatomy. I cannot cover the examples that we witness of integration of different areas, such as genetics, ecology, zoology and plant tissue culture, breeding, physiology, biotechnology, among others.

For instance, we can argue adaptations such as from the halophytes, hydrophytes, with anatomical basis; besides observe structural attributes of sun and shade plants. Here I highlight initiatives such as Professor Fahn, who compiled some of these in his book Xerophytes. We can put these adaptations in perspective and extrapolate plant ecological aspects, responses, roles and functions, and in a nutshell, use a valuable tool such as plant anatomy in support of this reasoning. In addition to that, anatomic figures may pleasantly illustrate research papers, what ease the understanding of the results. Further, we have histochemical tests available that encompass the localization in the

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plant body of several chemicals substances, allowing for instance, the follow up of reserve consumption such as in seeds, as well as harness secretory structures ecological features. In this milieu, I may cote the perspective of identification of morphogenic responsive explants or cells based on some of these tests. On the other hand, there are examples that cloned genes prompted epidermal cells, such as bulliform cells and conferred increased resistance to water deficit in species such as *Oriza sativa*. Besides, histometry measures and several indexes are currently used for physiological or developmental purposes, and even contribute to plant breeding issues. Although a basic study field, plant anatomy has the potential for widening the connection among research fields. Similarly, to the coted major, where we dissect the “little box” so called “cell” to understand the plant tissues and the organism as a hole, it is time to “think out of the box” and be opened to experiment what our major is made of. Finally, answering the question, whatever plant anatomy is due for; our research goals shall surely make use of good will and imagination.

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Conflict of interest

The authors declared there is no conflict of interest.