

Origin and Development History of Plant Physiological Ecology

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Abstract: Origin and development history of plant physiological ecology is discussed in this paper. The characteristics of plant physiology and ecology indicate that it has the characteristics of the parental origin of plant ecology and plant physiology. It is an obvious interdisciplinary subject. To measure whether a discipline has vitality, it mainly depends on whether it can be tested in practice, whether it can provide a way of thinking and research methods for the sustainable development of society, economy or environment. Using the correct research method, we can avoid detours and achieve the goal smoothly. The study can help us understand the subject better.

Keywords. *Origin and Development, Development History, Plant Physiological Ecology*

I. INTRODUCTION

Plant Physiological Ecology is a branch of Plant Ecology and one of the most active research fields in modern ecology. It mainly studies the structure and physiological mechanism of plant acquisition of resources and the use of general resources for growth, competition, reproduction and protection. Research knowledge in disciplines such as functional anatomy. Plant Physiological Ecology Methodology is a theory about the general research methods of plant physiology and ecology. It is a combination of the historical development of plant physiology and ecology research methods and the development of general ecological logic thinking. Historically, any development of plant physiology and ecology has been achieved by certain methods.

Using the correct research method, we can avoid detours and achieve the goal smoothly. Plant physioecology is a branch of plant ecology, which mainly uses physiological viewpoints and methods to analyze ecological phenomena. Therefore, it studies the relationship between ecological factors and plant physiological phenomena, that is, the combination of ecology and physiology. Based on the review, the steps can be considered as follows.

(1) The stage of thinking and quasi-experimental methods. Under the conditions of low productivity in ancient society, people could only rely on the insufficient facts obtained by the superficial observation of the senses, conduct simple logical reasoning and illogical ideas, and draw some general conclusions with guesswork. Only simple logical reasoning and illogical conception can be carried out, and some general conclusions with guesswork can be drawn.

(2) The pioneering stage of the observation and description method. In large part because they are observant, there is no denying that observation is an important method of ecological research.

(3) Experimental method stage. A cognitive method of exploring objective laws under specific conditions. The

difference between the experimental method and the observation method is that there are human interventions, highlighting the main factors, so that the research object is expressed in a pure form that is easier to observe and analyze. The experimental results can be reproduced repeatedly, and the research can be repeated.

(4) Theoretical method and comprehensive method stage. The relationship between research objects and research methods has changed fundamentally. The research methods show a trend of crossing, diversification and integration.

(5) Stages of modern plant physiology and ecology. In this form, as a tool of scientific research, the use of a single research method has not met the needs. The relationship between research objects and research methods has undergone a fundamental change, from the single value of "one object and one method" to the multi value relationship of "one object and one method", which makes scientific methods present a cross, diversified and comprehensive development trend.

II. THE PROPOSED DISCUSSION

The development of the "Plant Physiology" experimental course basically follows the basic rules of "learning the content of the textbook, teachers explain the principles and answer questions, students operate independently, and complete the experimental report". The plant physiology experiment contains many experimental contents and rich knowledge points. It is a difficult problem for every teacher to complete all the experimental contents within the limited school hours. Basic experiments are confirmatory experiments, which are used to verify the principles, methods, algorithms, applications, etc. in theoretical teaching. The purpose is to master the basic experimental skills, deepen the understanding of the basic knowledge learned in the classroom, and evaluate the students' understanding of the stage as the level of understanding and mastery of knowledge. In order to deepen students' understanding of the basic theoretical knowledge of plant physiology and promote students' mastery of basic experimental operation skills, we have selected a small number of the representative basic verification experiments from a large number of basic experimental contents.

In traditional experimental teaching, the teacher prepares experimental materials, core experimental instruments and prepared experimental reagents in advance. In class, the teacher conducts experimental demonstrations first, and students follow the experimental steps provided by the teacher to conduct experimental operations. This kind of teaching mode can easily make students inert. In order to stimulate students' interest in learning, we allow students to actively participate in the cultivation of experimental materials and the preparation of experimental drugs. The "Plant Physiology" experimental course is a verification of the learning content of the "Plant Physiology" course, which can effectively help

students consolidate the basic knowledge of "Plant Physiology" classroom learning and enhance students' understanding of the theoretical course. At the same time, by encouraging students to complete experiments independently, it can also improve students' practical ability and scientific thinking ability. With the methodological breakthrough of experimental science, the research of physiological ecology must work from the molecular level to the comprehensive aspect of the longitudinal level of the ecosystem. This will help to correct the traditional simplified requirements for mechanistic research in the past.

Today's plant physiology and ecology has begun to consider exploring the plant's response to a variety of nutrient resources at the target molecular level. One of these studies is to focus on membrane systems. Biofilms play a variety of the functions, such as separating, organizing and transmitting various metabolic activities of cells, and they play an important role in maintaining the stability of normal physiological and biochemical processes of organisms. At the same time, the integrity of the membrane determines and reflects the stress of cells. The recent rapid development of plant physiology and ecology shows that it can provide mechanistic explanations for some ecological phenomena and sustainable utilization of resources. It has received more and more attention from scholars at home and abroad.

CONCLUSION

Origin and development history of plant physiological ecology is discussed in this paper. Plant physiology and ecology can provide mechanistic explanations for various problems in the ecology. It is one of the three poles of ecological development and the core and link of research at different levels of ecosystems, communities and populations. Considering this, the designed model is then applied to the development of the related studies. In the future, some more

discussions will be considered.

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