



DOI: [10.5958/2249-7137.2021.02101.7](https://doi.org/10.5958/2249-7137.2021.02101.7)

ORIGINS AND DEVELOPMENT OF A SCIENTIFIC DISCIPLINE: PHYSIOLOGICAL PHYTOPATHOLOGY

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ABSTRACT

*The life cycle of the pathogenic oomycete *Phytophthora infestans*, which causes late blight in potatoes and was responsible for catastrophic famines in the 1840s, was explained by German scientist Anton de Bary (1831-1888) in 1860. DE BARY (1861) founded the scientific field of physiological plant pathology in a book on the subject released 150 years ago. With reference to Charles Darwin's (1809-1882) theory of descent with modification by natural selection, we outline the life and scientific accomplishments of Anton de Bary, who created the words "symbiosis" and "parasitism." De Bary's discovery of the cause of wheat stem rust disease, which is caused by infections with the fungus *Puccinia graminis*, is then discussed. We conclude that "nothing in phytopathology makes sense except in the light of Darwinian evolution" since continuous pathogen-host plant co-evolution is widely established in nature. Finally, we discuss the importance of fundamental plant science research in terms of practical applications such as agricultural production maintenance and improvement, as well as food quality.*

KEYWORDS: *Evolution, Physiological, Phytopathology, Scientific, Theory.*

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