

Editorial

# Parasites as Disruptors: From Ecology and Evolution, through Cell and Molecular Biology to Clinical and Veterinary Medicine

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Fundamental to our understanding of natural processes, is the measurement of responses to disruptions in the status quo. Knowledge of human, animal and plant health stems from the careful comparison of the disruptive effects of diseases with the healthy phenotype. While the inner workings of organismal physiology are typically revealed by curating the impacts of endogenous or exogenous disruptors, disruption of cellular and molecular interactions is paramount to understanding the complex cellular choreography within multicellular organisms or the population-level co-ordination between single celled organisms (and interactions with their hosts). Individual and population interactions, in both the local and global context, can be revealed by disruptive behaviours caused by organisms that break down the natural connectivity, while the influence of disrupting factors can shape our knowledge of the workings of whole ecosystems. Parasites can be found in most species and can therefore act as disruptors across all these natural processes. This puts parasitology at the heart of a wide range of disciplines, from medicine to ecosystem health. Some of our major parasitic diseases also significantly influence social and political activities. Developing a greater understanding of parasitology can lead to both an intrinsic knowledge of our parasites and also a greater understanding of how natural processes work.

The science of parasitology, therefore, involves and is enriched by scientists across a wide spectrum of disciplines. This new journal, *Parasitologia* [1], published by the MDPI Group, aims to be inclusive of the breadth of research in parasitology from molecules to ecosystems and beyond. It will, of course, focus on the impacts of parasitic infections on human and animal health but also encompass the impacts of parasites, and their vectors, on the wider health of our planet.

I am excited to introduce this first issue of *Parasitologia* which comprises a range of articles across the spectrum of disciplines. At the molecular end of the spectrum, you will find a detailed description of the properties of a key glycolytic enzyme from the sheep parasite *Teladorsagia circumcincta*, which also offers potential as a vaccine candidate [2]. At the other end, we present a paper which explores the effects of neonicotinoid pesticides on life history traits, and susceptibility to *Plasmodium*, of the vector *Culex pipiens* [3].

I hope that as we develop this new journal, you will join our journey, make use of the knowledge others have created and contribute your own research.

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## Short Biography of Author



**Geoff Hide** is Professor of Parasitology at the University of Salford in the UK. He currently holds the position of Director of Human and Natural Sciences within the School of Science, Engineering and Environment at Salford. His research interests focus on protozoan parasites—*Toxoplasma* and trypanosomes comprise a large body of his work—but he has also published in other areas of parasitology. His interests are broad and range from parasite epidemiology and ecology, through population genetics and host parasite interactions to cell and molecular biology. He has previously been on the Council of the British Society of Parasitology and has been elected a Fellow of the Royal Society of Biology, the Royal Society of Medicine and the Linnean Society.

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