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INTRODUCTION TO THE VON IHERING CENTENARY SYMPOSIUM*

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Perhaps the greatest strength of parasitology in general and the American Society of Parasitologists (ASP) in particular is the breadth of groups studied and the research interests of its membership. As with all aspects of biology, such diversity can be encompassed efficiently only in an evolutionary context. New techniques emerging during the past generation have served to increase the breadth of the base of parasitology even more. Consequently, ASP is under increasing pressure to attract those involved in yet more areas of research and to stem the fragmentation of the discipline in the face of this generation of new research programs and technologies. Evolutionary biologists are in a position to help provide one form of cohesion for parasitology by incorporating diverse data from diverse groups into a common framework for comparison, explanation, and prediction.

Von Ihering (1891) used evidence from temnocephalid flatworms and their crayfish hosts living in the mountains of Argentina and New Zealand to postulate that southern South America and New Zealand once shared a freshwater connection. This spawned half a century of biological research into questions of continental drift and the evolutionary relationships between parasites and their hosts. Biologically based studies of continental drift died when the geological community threw its united weight behind wholesale suppression of the concept of continental drift, only to reinvent the ideas 25 yr later. The reason such studies died in parasitology is more complex, and Greg Klassen addresses some of those issues in his contribution.

Harold Manter wrote to his major professor, H. B. Ward, that he feared for his job if he mentioned the Wegener hypothesis around the geologists at the University of Nebraska. Manter lived long enough to see his views about continental drift vindicated, and this may have prompted him to express his general views about parasite evolution 25 yr ago when, late in his career, he wrote

Parasites . . . furnish information about present-day habits and ecology of their individual hosts. These same parasites also hold promise of telling us something about host and geographical connections of long ago. They are simultaneously the product of an immediate environment and of a long ancestry reflecting associations of millions of years. The messages they carry are thus always bilingual and usually garbled. As our knowledge grows, studies based on adequate collections, correctly classified and correlated with knowledge of the hosts and life cycles involved should lead to a deciphering of the message now so obscure. Eventually there may be enough pieces to form a meaningful language which could be called parascript—the language of parasites which tells of themselves and their hosts both of today and yesteryear (Manter, 1966).

Strikingly, this was published in the same year that Hennig's Phylogenetic Systematics appeared in English, representing, among many other things, the Rosetta Stone for parascript. So, we have the outline of an interesting chronology. The roots of parasite evolutionary biology began 100 yr ago with von Ihering's publication, and it went into eclipse about 50 yr later. Manter and Hennig provided the groundwork for a revival 25 yr after that, and, hopefully, it is coming back into its own in this generation.

This symposium presents an in depth historical analysis of the origin of parasitological studies in biogeography and coevolution, followed by 5 presentations showing the way in which von Ihering's method and parascript have come together in a phylogenetic framework. Two of the presentations (by Brooks and by Gardner and Campbell) concern neotropical systems, because von Ihering lived in and was primarily interested in South America (a third has been published elsewhere [Van Every and Kritsky, 1992]). One of the other studies (by Hoberg) concerns arctic systems as a contrast with tropical systems, whereas another (by Platt) has a more global flavor, including some predictions about South America.

The data collected by such studies inform us about the origins, persistence, and sequence of assemblage of coevolutionary systems and parasite communities. Thus, they are essential information for all studies in parasite community evolution and host–parasite coevolution. Until

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the advent of phylogenetic systematic methods, such data were not available to ecologists and population biologists. The final contribution (by Janovy) is designed to suggest, explicitly and implicitly, ways in which a coalition of systematists, ecologists, and population biologists can energize basic parasite biology so that the best use can be made of the opportunities in comparative biology, historical ecology, evolutionary ecology, and biodiversity that will be the focus of much of biology in the 21st century.

Basic parasitology lost its way conceptually about 50 yr ago, degenerating from an active research program at the cutting edge of evolutionary biology into a set of inflexible rules passed from one generation of students to another as a sort of mantra to be repeated but neither questioned nor tested. Only recently has this area of parasitology begun to reassemble itself. I hope this symposium helps accelerate that reassembly, because there are many exciting career, research, and funding opportunities for such work, and people studying host–parasite systems should be in a position to compete successfully in that expanding market.

LITERATURE CITED

