The diverse interests of biologists, and the facts that accrue from those interests, produce a literature base that seems to increasingly fracture with time. The purpose of scholarly books is to organize and synthesize large amounts of such information into a context that allows readers to see all those seemingly disparate facts with focus, as parts of answers to larger questions. Some books do this better than others. The Preface of this book is not assuring. Poulin writes, “As a rule, I look for general patterns and ignore exceptions, unless the latter can shed further light on the problem at hand.” This is a curious way to attempt a synthesis of a scholarly subject (how could exceptions not shed light on a problem), but it is only one of the substantive weaknesses of Evolutionary Ecology of Parasites.

The book focuses on a particular kind of approach for the study of ecological properties of parasites, one that emphasizes the comparative method, in which ecological properties of species are examined explicitly in the light of published phylogenies. Poulin states that, “The literature is full of information on certain parasite traits just waiting to be put to use . . . .” The author further argues that there is now information available for so many species of parasites that population and community variables could be “examined in the light of phylogeny.”

The approach relies almost entirely on data-mining but ignores the fact that scouring the literature for data to use for post hoc purposes violates sound principles of research. The author almost admits as much in the chapter on life history evolution, where it is stated, “To compare species, however, one must use species-typical values for traits such as body size or fecundity. If these traits are as plastic within species as in the two above examples, how can we be sure that the values used are indeed representative of the whole species? The answer is that we cannot; one can only hope that averages provide good estimates of a species’ strategy.”

Support for the validity of mining “species-typical” values for parasite traits from the literature is based) will realize quickly that measures derived from them (whether life history or morphological) could be massively misleading: Most specimens are in such poor shape (and have been since their deposition) that they are inadequate for most taxonomic purposes and much less adequate for any ecological study. Second, for many taxa, the specimens that could be used to “truth” metrics reported in the literature simply do not exist; they were never deposited in a museum. Third, given the high phenotypic plasticity of soft-bodied animals, perhaps the species is less of a valid unit of measurement than is the population. Considering these problems, more than “hope” is needed to ensure that analyses based on these data are sound.

The author also calls on researchers to take advantage of the “… robust and well-resolved phylogenies that are now pouring out from molecular biologists and systematists.” That, at its best, is forgivable cheerleading. Molecular data can provide insight into evolutionary relationships, and it is true that phylogenies are being published at a rate higher than in the past. However, published phylogenies often represent a consensus of many equally parsimonious trees, each of which often contains numerous unresolved relationships. Thus, it might be premature to call such trees “robust and well-resolved.”

These concerns are crucial because the validity of the comparative approach depends entirely on the reliability of information that is gleaned from the literature, whether it is a report on the average length of a trematode egg or a phylogenetic tree of a host group. A thorough accounting of the topic would have acknowledged these difficulties and tried to wrestle with them so that the approach would become strengthened by ecologists’ efforts in the future. It is much easier, although less satisfying to the reader, simply to claim that the phylogenies are well resolved and that the mined data can be trusted.

A case study in the logic behind this kind of approach is provided in Chapter 10 (Component communities and parasite faunas), where Poulin states that the debate over ecological versus phylogenetic